Business computers: A delayed revolution

(Page 68)

INDEX 175 150 125 100 75 50 25 0

BUSINESS WEEK

A McGRAW-HILL PUBLICATION FIFTY CENTS JUNE 21, 1958

Trying to get his Boeing jet on the airlanes fast, William Allen sweats out the toughest tests in history. (Production)

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IN BUSINESS THIS WEEK *June 21, 1958*

GENERAL BUSINESS

Page
BUSINESS OUTLOOK 19
WASHINGTON OUTLOOK 41
INTERNATIONAL OUTLOOK 123
PERSONAL BUSINESS 145
THE TREND 164
FIGURES OF THE WEEK 2
READERS REPORT 5

CRUCIAL FIGURE TURNS UP. At last, the Federal Reserve Board's index of industrial production ends its decline 25

STRATEGY FOR ECONOMIC COLD WAR. New plan links U. S. and Free World aid resources to strengthen West, counter Soviet's trade push 26

CUSTOMERS ARE SET TO BUY AGAIN. Detroit hangs large hopes for the '59 model year on buyers' increasingly debt-free position 28

MALL SPURS DOWNTOWN SALES. So Grand Haven, Mich., for one, continues its mall tryout. It's a fast-spreading idea 30

HALF A LOAF FOR HOPEFUL STEEL. Surprisingly good business in June, some drop in July and at least a modest price increase 32

SHORTER VACATION HOPS. This summer's domestic pleasure seekers aren't expected to go as far or spend as much as last year's 33

FAVORS WERE A MISTAKE. So says Sherman Adams at House subcommittee hearing. But he denies any misuse of influence 34

TRAINS SHARE CHICAGO HIGHWAY WITH AUTOS 36

IN BUSINESS. News about more U. S. passenger liners, dismissal of Parke, Davis antitrust charges, rescue of Milwaukee's urban renewal 38

SPECIAL REPORT

COMPUTERS: A DELAYED REVOLUTION. What business is learning about their far-reaching possibilities—and how they are going to shake up corporate organization 68

THE DEPARTMENTS

BUSINESS ABROAD: **In Business Abroad.** News about Willy's negotiations, Quebec's grab for U. S. industry, Euratom, Japanese trade, nationalist trend in Brazil 105

Argentina Opens Arms to Kaiser. Change in government brings change in fortunes. 106

FINANCE: **The Assets Keep on Climbing.** Pension funds reach record totals; common stocks are more popular, but bonds are still top dog 97

GOVERNMENT: **In Washington.** News about trade association heads' views on the economy, Supreme Court rulings, atomic power 135

LABOR: **Too Many Deals With Outcasts.** Flock of pacts between AFL-CIO unions and Teamsters, and NMU flirtation with ILA, put federation council on spot 127

"Hot Cargo" Curb. High court upholds legality of boycott clauses, but bars union pressure to enforce them 130

In Labor. News about labor reform bill, SUB, maritime strikes, cement agreements. 133

MANAGEMENT: **In Management.** News about new presidents at Kress and Woolworth's, compensation in murder case, brotherly Philadelphia bank 58

Even MBAs Feel the Pinch. The 1958 alumni of graduate schools of business are finding job offers fewer, but not really scarce 60

MARKETING: **Why Inland Steel Is So Lively.** Diversity and a choice location keep the eighth largest steelmaker busy despite recession 47

In Marketing. News about appliance distribution, gasoline price wars, new consumer study, setback for UHF TV 55

THE MARKETS: **Market Sheds Defensive Mood, But Pros See No Bulls in Sight.** Investors shift to less defensive stock groups but expect no new boom 136

In the Markets. News about stocks reaching high for the year, the bond market, growth of investment funds, Florida East Coast Ry. bonds 140

MONEY AND CREDIT: **Some Rates Are Dropping** as savings volume reaches new heights. Except for competition among savings institutions, the decline would be faster 62

PRODUCTION: **Jet Tests Move at Jet Speeds.** How Boeing and CAA together are readying the 707 transport for service, months ahead of schedule 148

New Products 160

RESEARCH: **New Hope on Rocket Fuel.** Prepackaged liquids, with fuel and oxydizer mixed together, could solve countdown delays. They're still experimental 116

In Research. News about Sputnik report on earth's magnetic field, three-dimensional heart X-rays, power reactor study in West, auto engines and fuels 118

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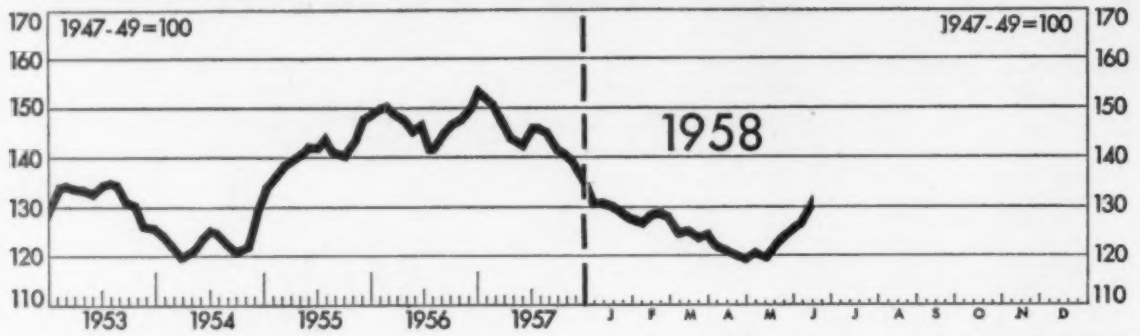
NUMBER 1503

FIGURES OF THE WEEK



BUSINESS WEEK INDEX (chart) . . . . .

	1946 Average	Year Ago	Month Ago	Week Ago	§ Latest Week
	91.6	**146.7**	**123.2**	**†129.6**	***132.1**

PRODUCTION

Steel ingot (thous. of tons)	1,281	2,181	1,523	†1,728	**1,737**
Automobiles and trucks	62,880	156,223	113,998	†97,877	**107,068**
Engineering const. awards (Eng. News-Rec. 4-wk daily av. in thous.)	$17,083	$66,528	$78,737	$86,912	**$80,033**
Electric power (millions of kilowatt-hours)	4,238	11,958	11,257	11,681	**12,109**
Crude oil and condensate (daily av., thous. of bbls.)	4,751	7,294	6,262	6,256	**6,335**
Bituminous coal (daily av., thous. of tons)	1,745	1,634	1,042	1,275	**1,305**
Paperboard (tons)	167,269	287,444	269,356	248,617	**290,704**

TRADE

Carloadings: mfrs., miscellaneous and l.c.l. (daily av., thous. of cars)	82	67	56	57	**58**
Carloadings: all others (daily av., thous. of cars)	53	55	34	38	**44**
Department store sales index (1947-49 = 100, not seasonally adjusted)	90	134	138	116	**135**
Business failures (Dun & Bradstreet, number)	22	265	327	325	**254**

PRICES

Spot commodities, daily index (Moody's, Dec. 31, 1931 = 100)	311.9	426.0	401.0	399.8	**399.7**
Industrial raw materials, daily index (BLS, 1947-49 = 100)	††73.2	93.4	80.7	81.7	**81.6**
Foodstuffs, daily index (BLS, 1947-49 = 100)	††75.4	84.1	92.7	91.6	**91.1**
Print cloth (spot and nearby, yd.)	17.5¢	17.9¢	17.3¢	17.4¢	**17.4¢**
Finished steel, index (BLS, 1947-49 = 100)	††76.4	174.3	181.6	181.6	**181.6**
Scrap steel composite (Iron Age, ton)	$20.27	$56.17	$34.00	$35.50	**$35.17**
Copper (electrolytic, delivered price, E & MJ, lb.)	14.045¢	31.155¢	24.655¢	24.980¢	**25.220¢**
Wheat (No. 2, hard and dark hard winter, Kansas City, bu.)	$1.97	$2.24	$2.27	$2.12	**$1.98**
Cotton, daily price (middling, 1 in., 14 designated markets, lb.)	**30.56¢	33.97¢	34.80¢	34.80¢	**34.80¢**
Wool tops (Boston, lb.)	$1.51	$2.22	$1.62	$1.59	**$1.65**

FINANCE

500 stocks composite, price index (S&P's, 1941-43 = 10)	17.08	48.06	43.42	44.55	**45.09**
Medium grade corporate bond yield (Baa issues, Moody's)	3.05%	4.64%	4.62%	4.57%	**4.54%**
Prime commercial paper, 4 to 6 months, N. Y. City (prevailing rate)	¾–1%	3¾%	1¾%	1⅞%	**1½%**

BANKING (Millions of Dollars)

Demand deposits adjusted, reporting member banks	††45,820	56,448	54,706	55,686	**57,100**
Total loans and investments, reporting member banks	††71,916	86,754	91,785	92,934	**93,534**
Commercial and agricultural loans, reporting member banks	††9,299	31,519	30,093	29,677	**29,790**
U. S. gov't guaranteed obligations held, reporting member banks	††49,879	25,690	30,511	31,289	**31,216**
Total federal reserve credit outstanding	23,888	24,988	24,854	25,240	**25,440**

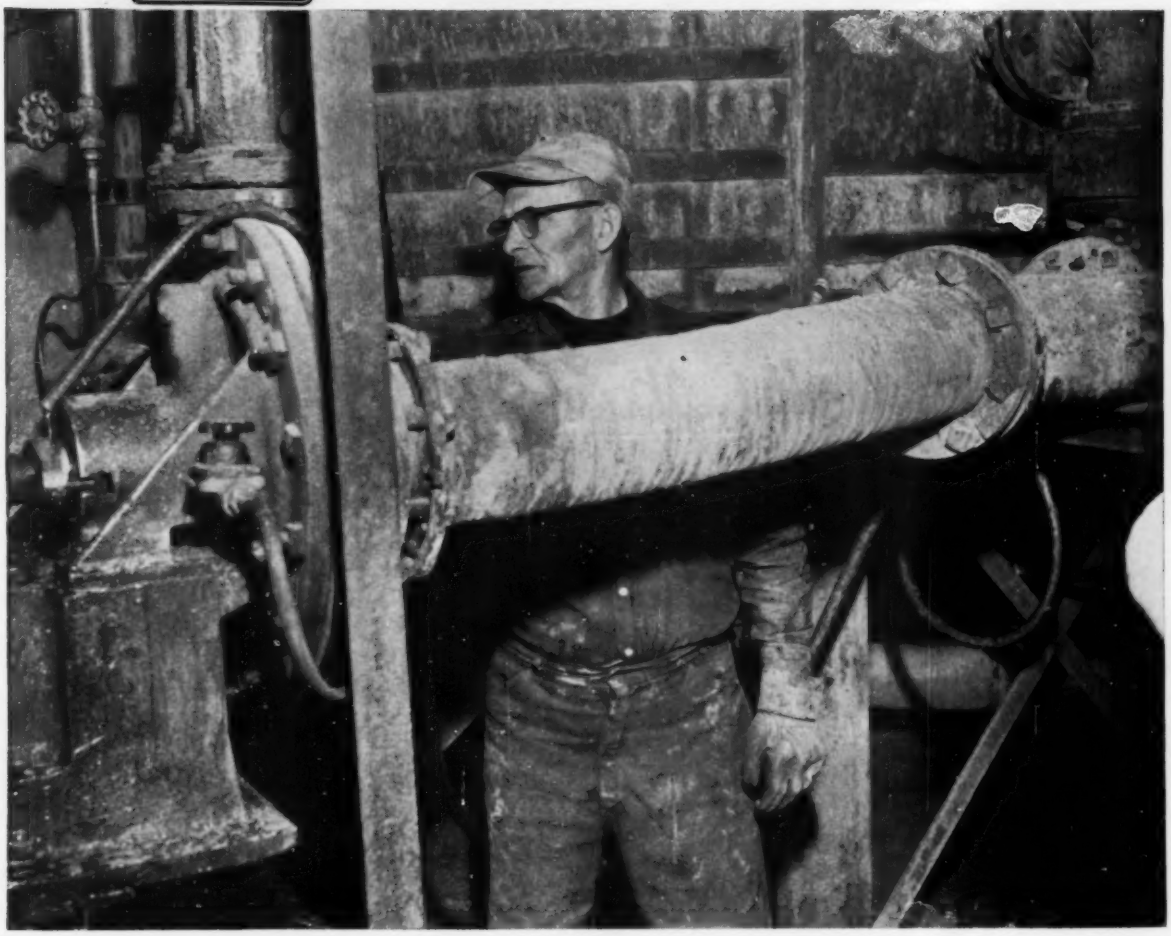
MONTHLY FIGURES OF THE WEEK

		1946 Average	Year Ago	Month Ago	Latest Month
Bank debits (in millions)	**May**	††$85,577	$197,256	$204,100	**$195,100**
Wholesale prices (U.S. Dept. of Labor BLS, 1947-49=100)	**May**	78.7	117.1	119.3	**119.5**
Retail sales (seasonally adjusted, in millions)	**May**	$8,541	$16,644	$16,512	**$16,534**

* *Preliminary, week ended June 14, 1958.*
† *Revised.*
†† *Estimate.*
** *Ten designated markets, middling ⅞ in.*
§ *Date for 'Latest Week' on each series on request.*

THE PICTURES—Cover—Marshall Lockman; 26—(lt.) Grant Compton, (cen.) Cameramen, Inc., (rt.) W.W.; 29—Thiokol Chemical Corp.; 30—Mike Shea; 31—John Bennett; 32—Mike Shea; 33—Joan Sydlow; 34—W.W., 36—Chicago Transit Authority; 68, 69, 70, 72, 78, 80, 85, 90—Grant Compton & Herb Kratovil; 106—McGraw-Hill World News; 148, 149, 151—Marshall Lockman.

B.F.Goodrich



Bang, rattle, shake– pipes were cracking up

B. F. Goodrich improvements in rubber brought extra savings

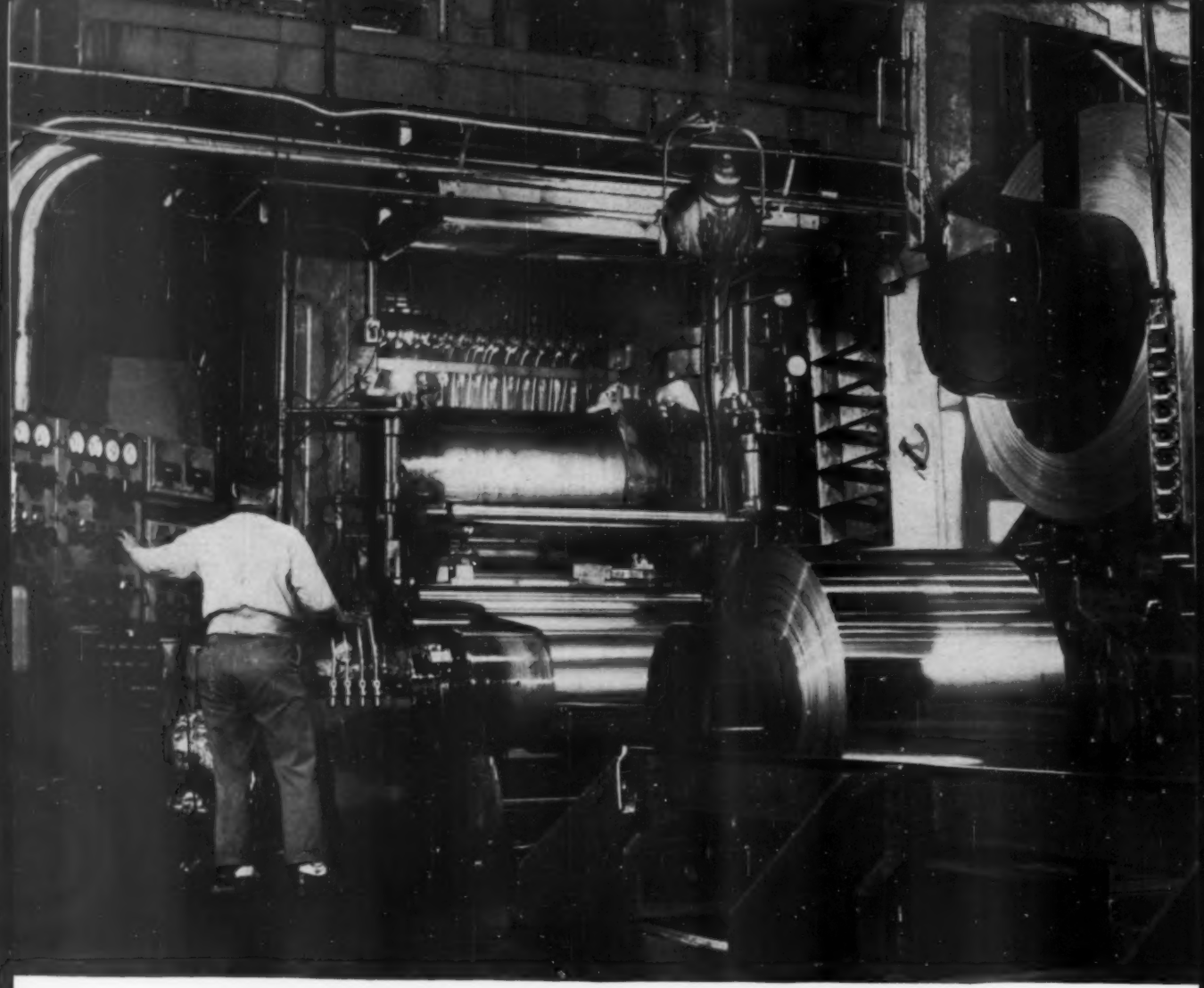
Problem: That powerful pump at left draws hot acid at 400 gallons a minute from tanks, then shoots it through big pipes. The pump vibration shook the pipes until they clanged, rattled and shivered, gradually cracked, leaked, lost corrosive acid that damaged equipment. Pipes had to be replaced two or three times a year.

What was done: The plant superintendent, working with a B.F.Goodrich distributor, decided to replace a short length of lead pipe between the tank and pump with a B.F.Goodrich Flexseal Connector. This is a special kind of hose, made of thick, resilient rubber, which is designed to absorb the pump vibrations traveling along pipelines.

Savings: At a cost of only $105, this B.F.Goodrich hose saved the company $1,000 in the first year by eliminating the harmful shaking that caused broken connections, frequent repairs, costly pipe replacements. Even greater savings will be made because the sturdy, acid-resisting hose is expected to last another two years. A coil of round steel wire, buried in the hose, keeps it from collapsing even under powerful suction.

Where to buy: Your B.F.Goodrich distributor has exact specifications for the B.F.Goodrich hose described here. And, as a factory-trained specialist in rubber products, he *can* answer your questions about *all* the rubber products B.F.Goodrich makes for industry. *B.F.Goodrich Industrial Products Company, Dept. M-369, Akron 18, Ohio.*

B.F.Goodrich *industrial products*



WRAP IT IN MIRRORS. Miles of aluminum foil for everything from heat-'n-eat meals to insulation and car radiators roll from Kaiser's new integrated aluminum plant at Ravenswood, West Virginia. It is one of over 115 aluminum foil mills built by Blaw-Knox.

Record 180,721,000 pounds of aluminum foil rolled in 1957—most of it on Blaw-Knox Mills

As fast as versatile aluminum foil can be produced, it is gobbled up by supermarkets, food processors, home-builders, defense departments —and a long list of industrial users. The future looks great for foil—and for Blaw-Knox, the world's leading builder of foil mills.

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READERS REPORT

Organization Man

Dear Sir:

I enjoyed reading your article Getting the Most Out of a Man [BW—May10'58,p57] and I heartily agree.

Du Pont President Greenewalt has a good point but evidently his vice-president David H. Dawson was proving he was a good "organization" man when he repeated the same words while speaking before the National Congress of Parents and Teachers in Omaha.

It appears the "environmental factors" at du Pont have made "molds" of top management at du Pont.

PETER F. MURPHY
SANGAMO ELECTRIC CO.
PUERTO RICO DIV.
RIO PIEDRAS, PUERTO RICO

Confusing Dates

Dear Sir:

You have a story about George M. Humphrey, When a Businessman-in-Politics Gets Back at the Company Helm [BW—May31'58, p37] . . . you state that Hanna has a provision that members of their boards must retire "after their 70th year." You go on to state that Humphrey must leave these boards when he becomes 71. Now a baby becomes 1-year old after its first year, 2-years old after its second year; consequently, Mr. Humphrey will reach the age of 70 after his "70th year." When he becomes 71, he will have completed his 71st year and will be entering his 72nd year—True or False?

C. D. GROVER
PRESIDENT
WHITEHEAD METAL PRODUCTS CO., INC.
NEW YORK, N. Y.

• We normally would go along with Reader Grover's reasoning. But Mr. Humphrey's interpretation is that he has three years more to serve . . . until his 71st birthday.

Privileged Class

Dear Sir:

Your article What Produced France's Crisis [BW—May31'58, p77] excellently analyzes events leading up to the current "revolution," but perhaps because it has been the common denominator in all of the French revolutions you overlook the situation of special privilege that has led the citizens

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of France from one revolution to the next in search of "equality." From the first to the last, only the institution of royalty has been abolished, but the number of people who enjoy their traditional extra special privileges has continued to grow, economics, politics, and military service now dispensing what royalty once conferred.

J. KESNER KAHN

CHICAGO, ILL.

No Recession Here

Dear Sir:

Re: Now, White Collars Are Frayed [BW—May31'58,p17] about white collar salary reductions by companies fearful of economic situation.

Compare this with recent action by my company in raising salaries 7%. This without union pressure.

HARRY ASHE

FLIGHT OPERATIONS
DOUGLAS AIRCRAFT CO.
SANTA MONICA, CALIF.

Well Done

Dear Sir:

Congratulations on your selection of artist John Groth to illustrate Canaveral Booms as U.S. Waypoint to Space [BW—Jun.7'58,p54].

LEWIS HABER

BROOKLYN, N. Y.

Dear Sir:

In the course of some 30 years . . . I have had occasion to read many stories and news articles on our company and our development and production of electronic traffic control equipment for streets and highways.

As far as we are concerned, it is my opinion that Electronic Cops to Speed Traffic [BW—May3'58,p 72] ranks high on the basis of factual reporting and an all-round job of good writing.

PAUL L. GREEN

ASSISTANT SECRETARY
AUTOMATIC SIGNAL DIV.
EASTERN INDUSTRIES, INC.
EAST NORWALK, CONN.

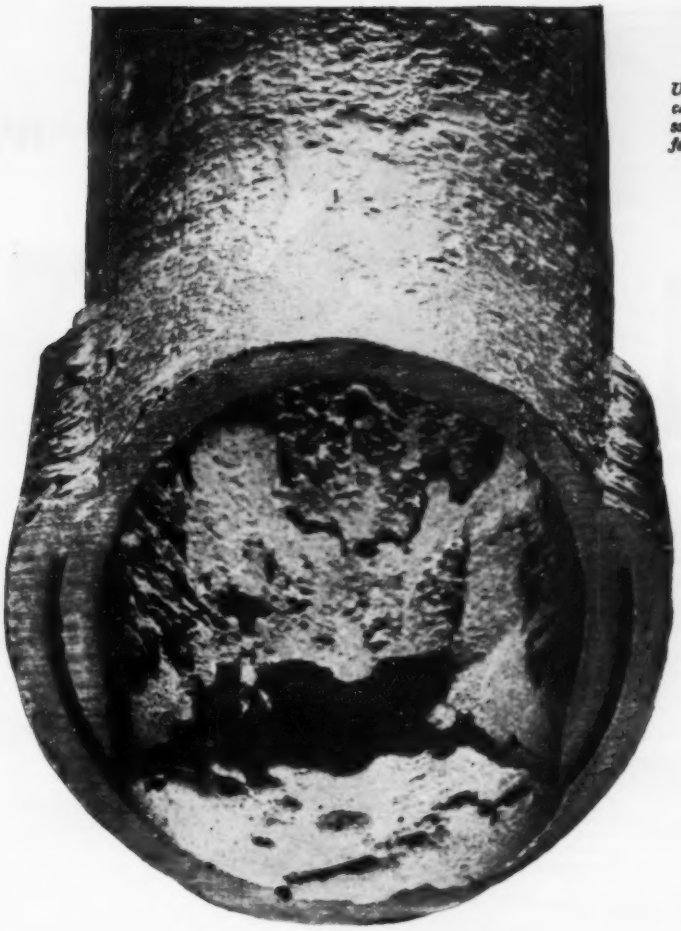
Dear Sir:

As an executive of one of the nation's largest household goods moving companies, I can particularly appreciate your item under Personal Business [BW—May3'58, p117,118].

It is one of the best and most impartial articles on moving that I have read in a long time. . . .

B. J. BERESWILL

UNITED VAN LINES INC.
ST. LOUIS, MO.



Unretouched photo of pipe, corroded by carbonic acid, which has been "half-soled." This was only a temporary cure, for now the patch is also being eaten away.

WHAT DO YOU PAY FOR "HALF-SOLED" PIPE?

Plenty—in expensive maintenance and costly down time. This pipe has been "half-soled" by welding a metal half-circle over the corroded section—a temporary measure at best. But the original cost has been lost, for now the patch is also being eaten away. You can save money by preventing damage like this with proper water treatment.

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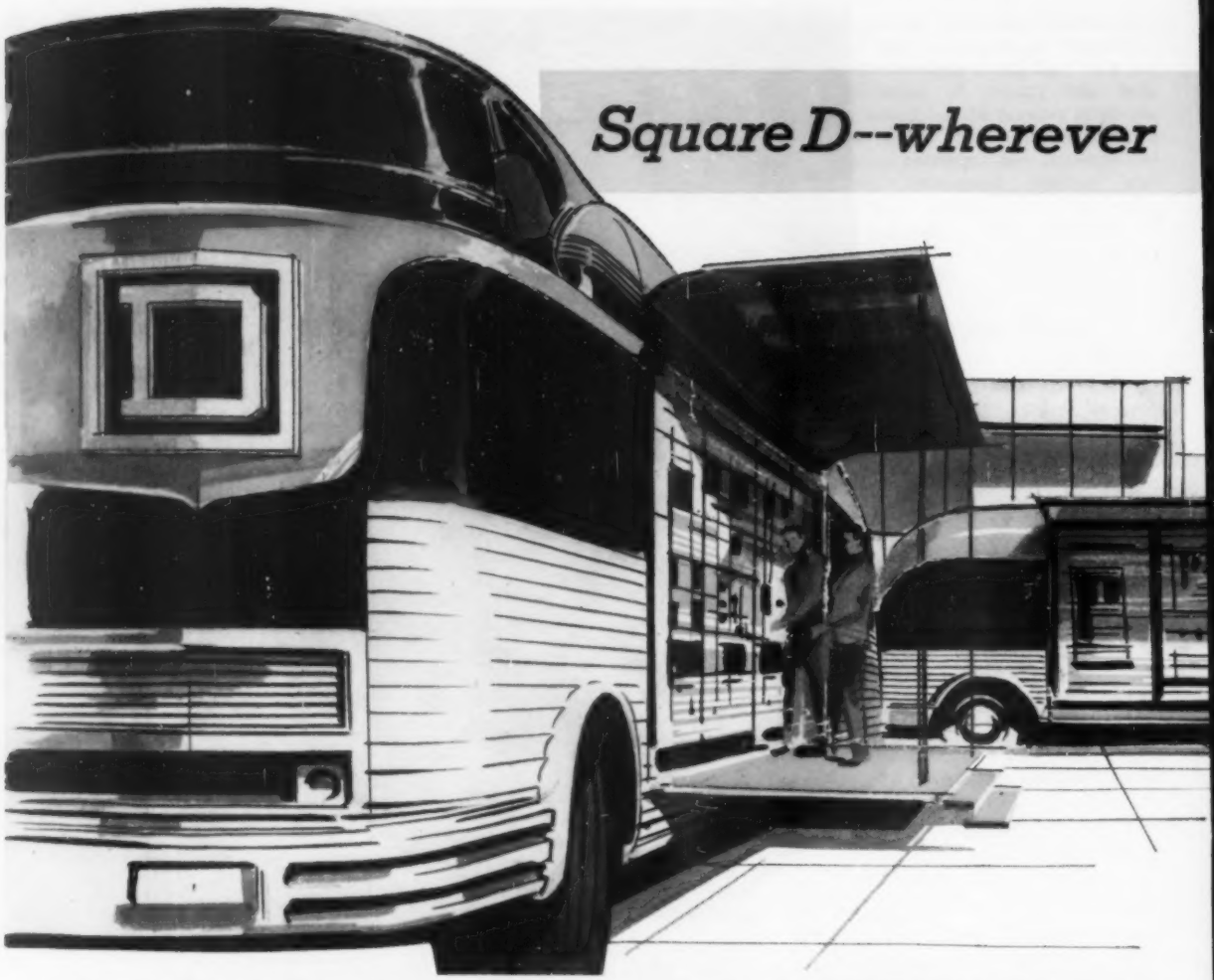

PRODUCT CARAVAN on NATION-WIDE TOUR!

Throughout this year and next, Square D's ***Product Caravan*** will be on tour, presenting and demonstrating its broad line of electrical control and distribution equipment to industrial plants, architects, electrical contractors, distributors and consulting engineers all over the country.

Each of the two 33-foot-long ***Product Liners*** is a mobile showroom featuring a wide variety of action exhibits. Square D Field Engineers are serving as hosts, demonstrating equipment and discussing electrical problems and applications. The smaller vehicle (*extreme right, above*) is a "hospitality wagon" from which refreshments are served.

Main objective of the ***Product Caravan*** is to present key audiences with interesting, tangible proof of Square D's continuing design leadership in the field of electrical distribution and control.

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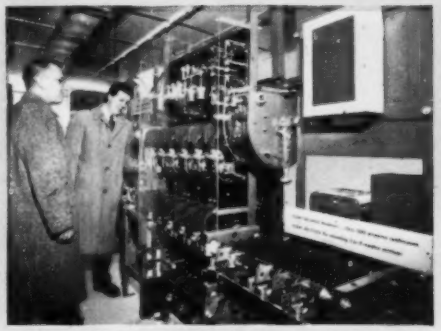
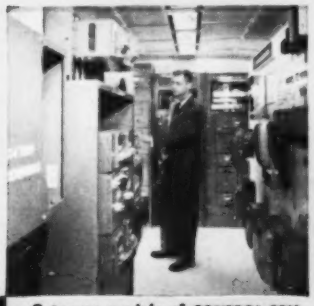
electricity is distributed and controlled

Finest CIRCUIT BREAKER ever built is Square D's claim for its QO breaker. With the above demonstrator, visitors test its performance under five different load conditions.



CONTROL FOR HEAVY INDUSTRY is well represented. Visitors can take over as crane operators. Above, EC&M CRANE CONTROL and TAB-WELD RESISTORS.



Cutaway models of CONTROL CENTERS, DIMMERBOARDS, SWITCHBOARDS, and PANELBOARDS afford complete inspection of design and operation.

Movable wings open on the sides of the Coaches, exposing exhibits and providing spectator ramps. Special electro-hydraulic system raises brilliantly lighted canopies 8 feet above coachtop level for nighttime displays.

A *Complete* LINE OF ELECTRICAL DISTRIBUTION AND CONTROL EQUIPMENT

ADJUSTABLE SPEED DRIVES
BUSWAYS & WIREWAYS
CIRCUIT BREAKERS
CONTROL CENTERS
CRANE & HOIST CONTROL
DISTRIBUTION SWITCHBOARDS
ELECTRIC TRUCK CONTROL
HIGH VOLTAGE CONTROL
LAUNDRY CONTROL
LIFTING MAGNETS
LIGHTING AND POWER PANELBOARDS
LIGHTING CONTROL—LOW VOLTAGE
LIMIT AND FOOT SWITCHES
MACHINE TOOL CONTROL
MAGNETIC BRAKES
METER MOUNTINGS
MOTOR STARTERS
PRESS CONTROL
PRESSURE, FLOAT, & VACUUM SWITCHES
PUSHBUTTONS
RELAYS AND CONTACTORS
RESISTORS
SAFETY SWITCHES
SERVICE ENTRANCE EQUIPMENT
STAGE DIMMERBOARDS
STEEL MILL CONTROL
SWITCHGEAR & UNIT SUBSTATIONS
SYNCHRONOUS MOTOR CONTROL
TERMINAL BLOCKS
TEXTILE MACHINE CONTROL
TIMERS
VOLTAGE TESTERS
WELDER CONTROL

WATER IS

MANY FIND THE ANSWER

IN 1959—Industrial consumption of water will reach 71 billion gallons and—*adequate water for industry will continue to be a major concern of management . . .*

Domestic consumption will average some 28,000 gallons per person and —*adequate water supply for the American home will directly affect our health and standards of living . . .*

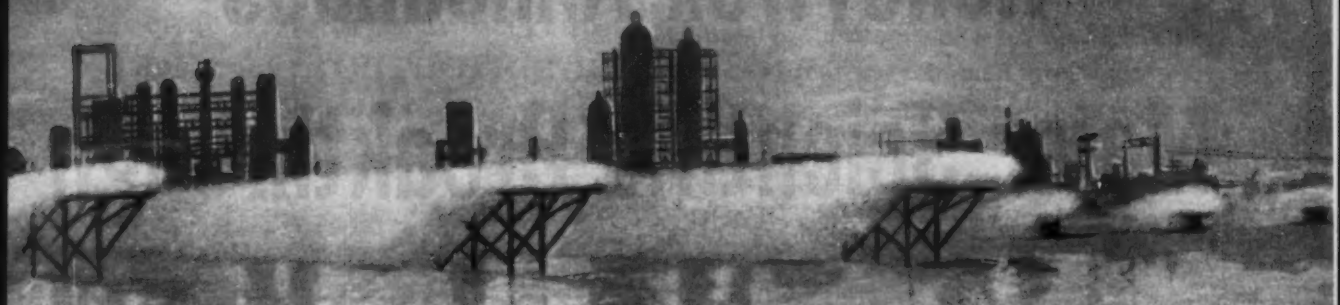
On the farm, water will represent a major factor in successful farm management because—*more and more farms will depend on controlled water utilization for crops and livestock . . .*

If you have a problem of conserving, containing or controlling water, investigate the on-the-job superiority of today's plastic materials. Shown here are just a few of the ways water is being used more effectively with products made of BAKELITE Brand Plastics. For full details on these and other applications that may solve a water problem for your community, plant, farm or home, write to Dept. B-14 today.

6014-1

EVERYBODY'S PROBLEM!

IN BAKELITE PLASTICS
BRAND



New efficiency and economy in the delivery of water have been achieved with flexible, easily installed plastic pipe extruded from BAKELITE Brand Polyethylene.

Conservation of water is now a farm low-cost, "do-it-yourself" project—by means of tough irrigation ditch liner sheeting made from BAKELITE Brand Polyethylene.

Helping to harness—contain—and control water are moisture-resistant paints, coatings and finishes based on a wide range of BAKELITE Brand Resins.

To avoid costly repairs or replacement, a liner made of KRENE vinyl plastic can restore damaged water tanks or other leaking containers to 100% efficiency.

BAKELITE
BRAND
PLASTICS

Products of **UNION CARBIDE** *Corporation*

BAKELITE COMPANY, Division of Union Carbide Corporation, 30 East 42nd Street, New York 17, N. Y.
In Canada: BAKELITE COMPANY, Division of Union Carbide Canada Limited, Toronto 7

The terms BAKELITE, KRENE and UNION CARBIDE are registered trade-marks of UCC.

Honeywell Announces Major Scientific Breakthrough in Business Data Processing: ORTHOTRONIC CONTROL ....Available only on DATAmatic 1000

Not only detects errors, but also corrects errors automatically in 1/20th of a second without human aid... Re-creates lost or damaged data by means of amazing non-stop correction principle... Insures uninterrupted accuracy... ORTHOTRONIC CONTROL– biggest advance in 10 years of processing data electronically.

Today, absolute accuracy in business data processing is taken for granted. Modern computers feature elaborate self-checking systems which detect errors before they can slip through. But correction of these errors takes time.

Only DATAmatic 1000 can now detect *and correct* these errors automatically, instantaneously!

This seemingly impossible achievement is the latest contribution of Honeywell research, a force which has already rocketed DATAmatic 1000 many years ahead in business data processing.

ORTHOTRONIC CONTROL is the name given to this revolutionary new concept. Coupled with DATAmatic 1000's acknowledged superiority in every aspect of reliability, ORTHOTRONIC CONTROL now insures uninterrupted accuracy throughout the processing cycle. Information which has been lost or damaged by any cause whatsoever is literally re-created in its original, correct form. Where other systems would stop and "ask" for human assistance, ORTHOTRONIC CONTROL takes over, does what needs to be done and keeps DATAmatic 1000 humming right along at record-breaking speeds.

This self-correcting ability has an obvious impact on the profit potential of any data processing application. It automatically eliminates the unproductive machine time that can occur when human intervention or machine reprocessing is needed to retrieve lost information or to bring garbled information back to correct form. ORTHOTRONIC CONTROL vastly multiplies the economic advantages already enjoyed by users of DATAmatic 1000.

Along with such exclusive features as "frequency modulation" recording, 3-inch wide magnetic tape, multi-tape searching modes and dozens of other scientific *firsts*,ORTHOTRONIC CONTROL enables DATAmatic 1000 to set still higher standards of performance in terms of processing speed, capacity, reliability and versatility.

If your company is considering a general-purpose electronic data processing system, don't make a move until you've investigated DATAmatic 1000 with ORTHOTRONIC CONTROL.

For full details, call or write DATAmatic Division, Dept. B6, Newton Highlands 61, Massachusetts.

Honeywell

DATAmatic

ELECTRONIC DATA PROCESSING

Industry's chemicals:

WHAT'S MAKING NEWS?

Today, more than ever, industrial progress depends on chemistry. But chemistry's growth has been so rapid that top management finds it hard to keep up with important product developments—many of which have profitable applications in many businesses. This is the first in a series of news notes to give you facts about chemicals—the new ones and the more established ones—that may have dollars-and-cents meaning for your own operation.

NUMBER 1

You may wish to check certain items in this advertisement and forward to those concerned in your own company.

Route to:

_____

_____

_____

CHEMICAL "CLAW" INACTIVATES IMPURITIES

Manufacturers faced with problem of metallic ions in industrial liquids capitalize on unique properties of cost-saving chelates.

Metallic impurities in water—long the plague of countless industries—have met their match. The answer comes from an unusual, comparatively new process called "chelation". Its objective is the quick, economical inactivation of metal ions in water and other liquids used in manufacturing and processing. Its tools are a unique group of chemicals called "chelating agents". Foremost among these are Versene®, Versenol® and Versenex*, all products of Dow.

The word "chelation" comes from the Greek χηλη (chele), meaning "claw". It's an appropriate word, graphically descriptive of chelating action. This action has been likened to a claw closing around and isolating metallic ions—rendering them as fully inactive as if they had been removed from the liquid. Like criminals in chains, they're still there . . . but they can't do any harm.

Traditional methods of purifying liquids often prove far too costly for many industries and many applications. In these cases, chelation is the perfect solution.

We find chelation at work, for example, in the protection of products subject to hard water action. The benefit to liquid soap and shampoo manufacturers is obvious. According to one such manufacturer, "Versene in our formula increases shelf life, prevents clouding, color change and insoluble soap formations, and increases lathering. It means better cleaning, too. Best of all, it keeps our product clear, attractive and saleable indefinitely."

The many different formulations of Versene, Versenol and Versenex—each for a specific use—have proved invaluable to a number of industries. Examples: In making rubber, Versene inhibits copper and manganese ions which would cause cracking and rapid deterioration. In dyeing textiles, Versene eliminates streaking and spotting caused by iron, calcium or magnesium ions in the dye. In cleaning boilers and heat exchangers, Versene can be the answer to difficult scale removal problems for industry.

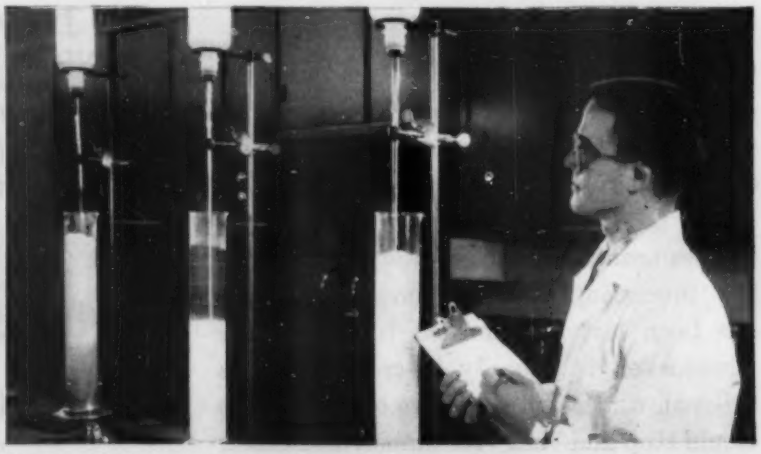
There's a medical potential, too. Use of chelates as decontaminants for radioactivity and in dissolving kidney stones and decalcifying bones is being studied. They have been credited with saving the life of a baby suffering from acute lead poisoning.

Past performance of Versene, Versenol and Versenex is impressive but the best is yet to come. Chelation's future seems limited only by the bounds of the imagination.

New solvent:

metals come clean . . . safely!

MOST manufacturers have to degrease or clean metal occasionally, if only in typewriters. But plant safety is a priority concern of management and



These three graduates contain: 1. Soft water and soap. 2. Hard water and soap. 3. Hard water and soap plus Versene. Foaming qualities of the first and third graduates are identical.

solvents often furrow brows. With one, the hazard is fire, with another toxicity. As a leading solvent producer, Dow put research teams to work developing a solvent which presents neither hazard. When Chlorothene® was introduced, another significant growth story began. The reason was simple. Chlorothene presents a substantially lower fire hazard than petroleum safety solvents commonly used. It has very low vapor toxicity. As a fast solvent for the cold cleaning of metals, it is a safety director's dream.

Chlorothene now stands unchallenged for safety spray, dip, bucket and wipe cleaning of metals. It's still quite new but is finding a place in more plants almost every day.

Taking the fire hazard out of heat-transfer

DOWTHERM®A is a heat-transfer medium delivering high-temperature, low-pressure, easily controlled heat. One food manufacturer reports: "In frying quality potato chips, we felt we needed direct fire to provide even, pinpoint temperatures. Dowtherm proved us wrong. Now we have higher precision frying and yet we've taken the fire out of the frying pan . . . and out of the plant."

Management men concerned with safety in rubber, petroleum, chemical and other industries have made the same happy discovery.

★ ★ ★ ★

Faster—safer—better. The adjectives for chemicals are many today. The products are not all new but they're all good news to profit-conscious management. More particulars on products discussed here can be obtained by writing Chemicals Sales Department 850B, THE DOW CHEMICAL COMPANY, Midland, Mich.

®TRADEMARK OF THE DOW CHEMICAL COMPANY

Dow chemicals basic to industry

Glycols, Glycol Ethers
Amines and Alkylene Oxides
Benzene Derivatives
Inorganic Chlorides
Alkylenes and Halogens
Solvents • Germicides
Fungicides • Herbicides • Fumigants
Hundreds of other Chemicals
Plastics • Magnesium

YOU CAN DEPEND ON

DOW

Other Dow chemicals of interest to the business community

THESE ITEMS ARE WORTHY OF NOTE

PENTACHLOROPHENOL

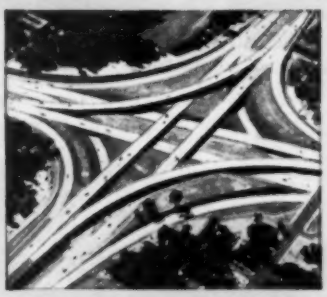
Need a low cost warehouse? This one was built on penta-treated poles for $2.68 per square foot including wiring, sprinklers and concrete floor. Penta-treated pole buildings are strong and wind resistant.

GLYCERINE

Price and supply of this important commodity stabilized by Dow's production of three grades of synthetic glycerine—synthetic (industrial), USP, USP 99.5%—all of unexcelled purity, from two different plants.

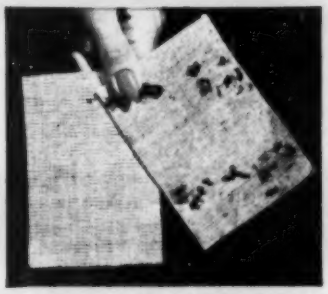
CALCIUM CHLORIDE

Dowflake® and Peladow® control dust around construction sites. Contractors discover calcium chloride products from Dow not only lay dust and melt ice, but speed setting and strengthen structural concrete.



DOWICIDE

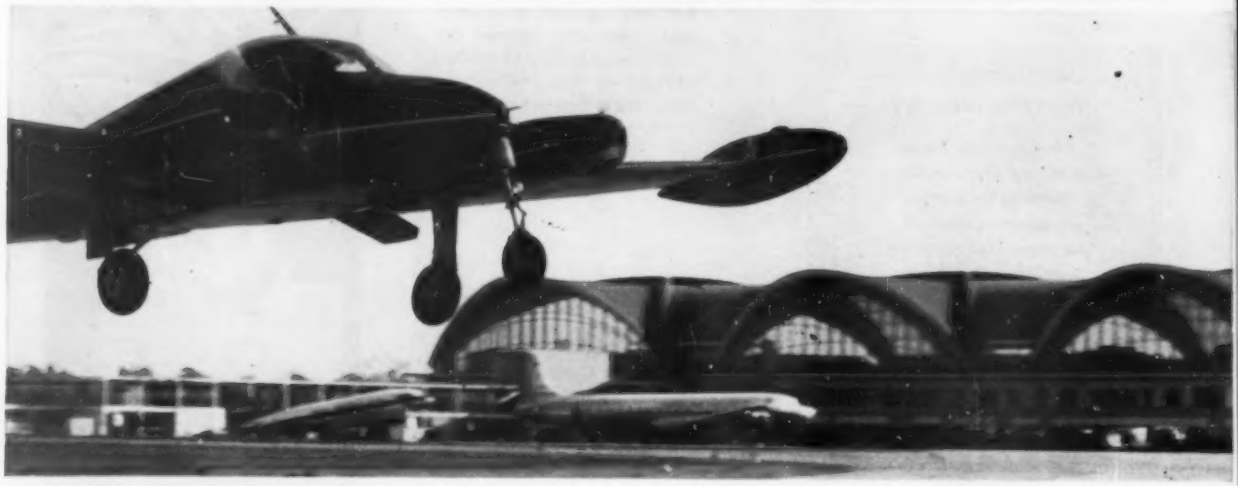
Rot and mold are top enemies of many materials. Dowicide® preservatives (germicides and fungicides) safeguard everything from textiles to liquid starches in supermarkets. Fourteen specific products available.



ST. LOUIS...the Strategic

Few areas can match the unlimited opportunities of this busy inland port. Widely diversified, flourishing industries create the

MAJOR CHEMICAL CENTER *produces a wide variety of chemicals, allied products. Raw materials come from nearby mineral, agricultural resources; by-products from industrial processing.*



UNSURPASSED TRANSPORTATION—*St. Louis is the center of a major inland-waterway system connecting 29 important industrial areas—offers direct air service to major U. S. markets, Europe.*

Center of America

economic stability that's the solid foundation for good living, a wide variety of activities and recreation.

IMPORTANT BASIC METALS AND INDUSTRIAL RAW MATERIALS *are close at hand: lead, zinc, copper, limestone, steel, coal, oil, others.*

INDUSTRY AND AGRICULTURE MEET *in St. Louis, one of the few major metropolitan areas where northeastern industrial might and the Great Plains' agricultural abundance overlap.*

Excellent opportunities for business and industrial expansion exist in Metropolitan St. Louis and the surrounding Union Electric service area. Consider these facts:

Transportation Center . . . Your choice of rail, air, truck, or barge lines which fan out from a truly central location. St. Louis is near both the geographic and population center of the nation.

Plenty of Water . . . The Union Electric area is one of the very few choice industrial locations with an unlimited water supply.

Plenty of Labor . . . Widely diversified industry and a surrounding agricultural area provide a great variety of skilled workers and a growing new labor supply.

Plenty of Power . . . Union Electric, one of the large privately owned utility systems, has launched a $290 million, 5-year expansion program to keep electrical output well ahead of this growing area's needs.

Excellent Business Climate . . . The unusually well-diversified industrial community of St. Louis is creating ever-expanding business opportunities under a new and progressive civic leadership.

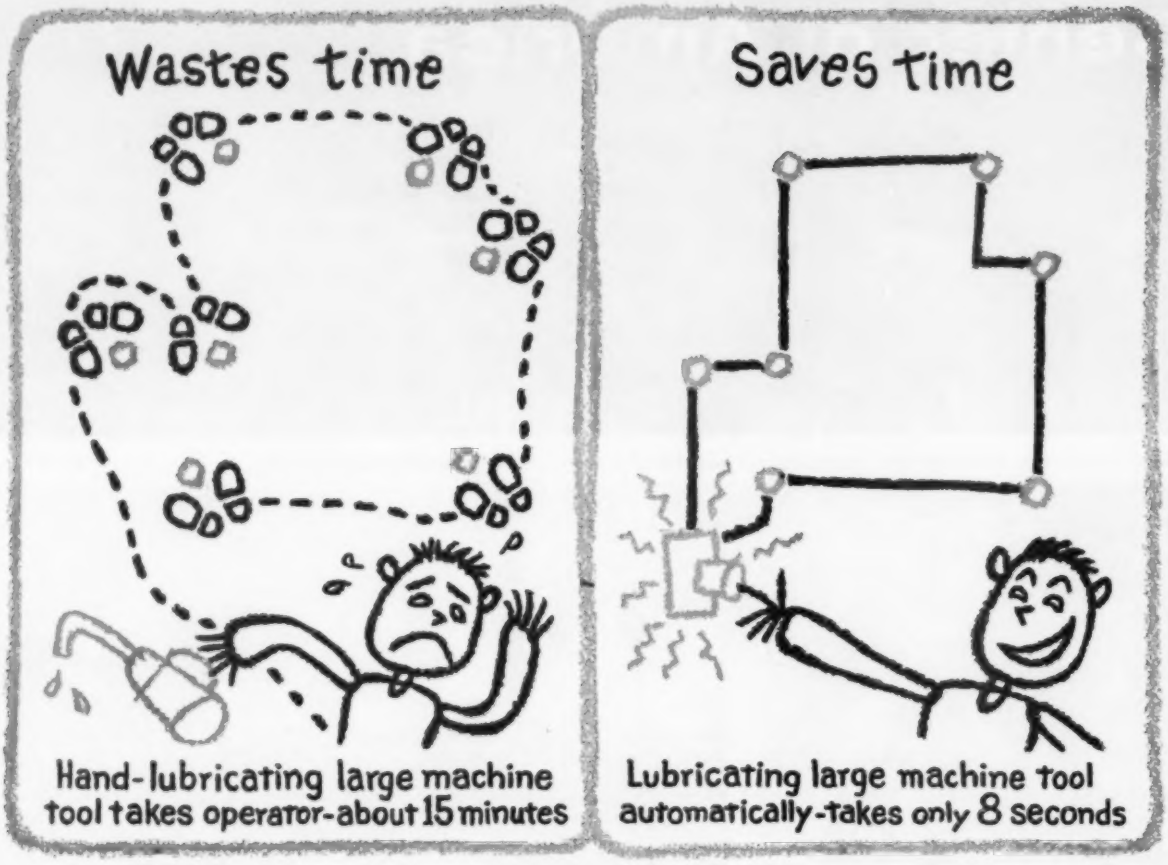
Choice Industrial Sites . . . Industrial development corporations like the Page Industrial Center and the new Meramec Industrial Development Corporation are developing land for commercial and industrial use and have choice sites available for immediate occupancy.

You are cordially invited to write to me for comprehensive information about the Union Electric area or specific information about plant locations. Your letter will receive full and completely confidential consideration.

J. W. McAfee, President

UNION ELECTRIC COMPANY

315 North 12th Blvd. • St. Louis 1, Missouri


Wastes time
Hand-lubricating large machine tool takes operator-about 15 minutes
Saves time
Lubricating large machine tool automatically-takes only 8 seconds

A large part of industry still relies on out-moded lubrication methods to maintain and protect its tremendous investment in expensive, high-speed, precision production equipment.

Economical operation of production equipment depends not only on the right lubricant, but also on the right amount in the right place at the right time.

Central lubrication cuts waste of manhours—in one case, 315 a month

Recent management surveys into plant lubrication practices have turned up some astounding opportunities for over-all savings. In a single plant these savings included a 60% reduction in maintenance expense and a 20% increase in production.

This particular study covered 60 machine tools performing turning, boring, drilling and reaming operations. Each operator lubricated his own machine with a hand gun and was allowed fifteen minutes per eight hour shift to do so—a total of 315 manhours.

But for one reason or another (neglect; new, untrained operators; misplaced or lost guns; no grease on hand, fittings damaged or missing) at least some of the twenty-one lubricating points on every machine were either improperly lubricated or had not been lubricated for a long time. These conditions were corrected by installing a central system on each machine, enabling the operator to spend all his time on productive work. Result—tremendous savings and greatly improved operation.

This experience is typical of the benefits that can be realized when management recognizes that organized lubrication is a major factor in cost control. Large firms, with plant lubrication engineers, and small firms, where lubrication is delegated to engineers who perform other duties, are uncovering exceptional opportunities to extend part life, eliminate downtime, reduce rejects (even save on lubricant cost) and otherwise add to income.

As consultants, Texaco's organization of Lubrication Engineers, operating in all 48 states, has been effective in outlining a practical approach to these problems. A more detailed discussion is available in an enlightening booklet: "Management Practices That Control Costs Via Organized Lubrication." Write The Texas Company, Dept. B31, 135 East 42nd Street, New York 17, New York.

LUBRICATION IS A MAJOR FACTOR IN COST CONTROL

(PARTS, INVENTORY, PRODUCTION, DOWNTIME, MAINTENANCE)

BUSINESS OUTLOOK

BUSINESS WEEK
JUNE 21, 1958

Business approaches midyear in a distinctly happier mood.

A good many basic industrial and economic statistics have apparently stabilized. Some have even turned upward.

True, many fingers still are crossed. Some observers fear a secondary spill; others worry about a discouragingly "long bottom."

But a little restraint now is healthier than the old overoptimism.

Probably there's no brisk upturn right around the corner.

Business can't take a 14% decline in output in the space of a year without some painful bruises. Nor can it quickly shake off such sharp cuts in inventory and in capital expenditures (though it should be remembered that the rate of decline in these items is slackening).

It is reassuring, nevertheless, that a recession of such size and shape hasn't shown serious signs of fanning out, of feeding on itself.

—•—

Industry will derive its greatest support in the next couple of months from a rise in consumer income (BW—Apr.19'58,p28).

Most of this will go to government employees, civilian and military.

Pay increases (retroactive to Jan. 1) will lump in the third quarter. **Personal income, which turned up in May, could be boosted by as much as $4-billion (at annual rates).** This would carry the figure to a new record, more than erasing the dip from 1957's $347-billion peak.

Hourly earnings of manufacturing workers will be going up.

A lot of these increases are automatic, written into contracts that run for more than a year. And Walter Reuther served notice this week that his auto workers will get more before new models roll.

The "pattern" may not be what it has been in other years. And it may not be set without lost income due to strikes. But it's coming.

Consumption is bound to get a pretty substantial lift from the foreseeable rise in personal income. The question is: How much employment will this generate, and how permanent will the addition be?

Whatever your answer, you can see here a possible turning point.

—•—

Consumer spending at retail has held up surprisingly—and encouragingly—so far this year. The total for the first-half of the year will be only a shade behind last year's $95-billion.

True, the gain has been concentrated in foods—where a large portion of the extra dollars have been spent only to meet higher prices.

A test of economic health involves, of course, a restoration of better balance. Autos and appliances are the things to watch.

—•—

Appliance manufacturers already seem to think they feel some improvement in business. This should be accentuated if the burst of activity in homebuilding proves more than a flash in the pan.

Another 200,000 homes annually might not be any great shakes, but any

stimulus at all would be welcome in major appliances whose output is down nearly 30% from the 1956 high.

—•—

Measuring the auto market is, of course, the greatest economic guessing game of the present season. Everyone knows, for example, that those 1955 cars are now or soon will be paid for (page 28).

But they'll be four years old for a trade-in on a 1959.

You can safely bet that autos will have their next rush of prosperity only when consumers once again feel free to go into debt.

The really remarkable thing about total retail spending this year is that it has held up so well while installment loans, on balance, were being reduced. Quite logically, the reduction in debt shows clearly in auto volume while cash sales such as foods show the gains.

It looks now as though deliveries of new U. S.-built cars to customers in the first half of 1958 would top output by about 200,000. But that's only because output is being held to 2,050,000 for the six-month period, 1.2-million less than in the same period last year.

Registrations for the six months (excluding 150,000-odd imported cars) will be about 2¼-million, 740,000 less than last year.

Final production of autos in this country during 1958 cannot be guessed without allowing for the possibility of a strike.

The auto makers had the advantage in contract talks before the expiration date because they knew they wouldn't build many cars this summer anyhow. But, when they get ready for new-model introductions, it becomes a question whether the Big Three will continue to stand pat.

If they do and a strike looms, the only certainty is that it will help dealers get rid of any 1958 models still around by that time.

—•—

Stirrings in some of our basic industries would seem to indicate that the worst of the recession is over, at least for now.

Steel is a familiar example. Operations have risen from below 50% of capacity to 65% in two months (though some fears linger that the rate may dip again with the end of buying to beat a price rise).

Less widely noted, **industrial chemicals,** which serve a broad manufacturing range, are showing distinct signs of an upturn.

Power for machines, just as vital in its own way to industry as steel and chemicals, has stabilized if it hasn't actually turned. You see that in coal and petroleum as well as electricity.

Output of both **coal and oil** had to be cut to unnaturally low levels while excess inventories were being moved. Some rebound was inevitable.

—•—

Here's an item on employment and payrolls you may have missed:

The only year-to-year gain of any consequence is at the state-and-local government level. The total is nearing 5,450,000, about 260,000 higher than it was at this time in 1957.

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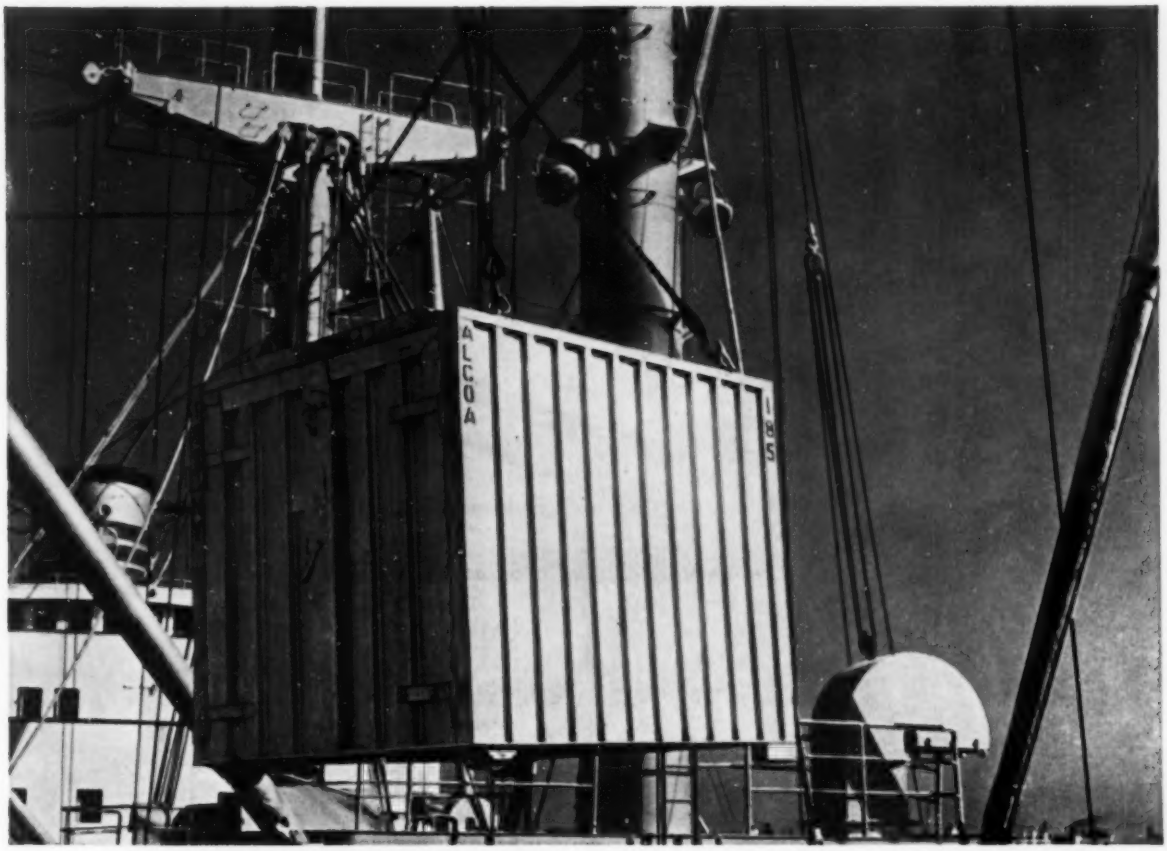


Cargo container service is heralded today as the new, desirable way to move goods. But to Alcoa Steamship Company, which introduced cargo vans years ago, it's an old story. Alcoa's vans are of modern construction and the right size for efficient handling. Facilities for maintaining them in first-rate condition have been established. Today, shippers with specialized cargoes find Alcoa's container service truly geared to the problem of getting their goods to the Caribbean quickly, efficiently and in good condition.

Your goods never had it so good

Lift on, lift off—Moving an Alcoa cargo container is quick, simple, efficient. Handling is cut to the minimum and merchandise gets extra protection because it stays locked up inside the van. Goods are safe from pilferage at all times.

Write today—Send for the 1958 edition of our "Caribbean Handbook." It's the complete guide to Caribbean shipping—includes a description of Alcoa's many services to Venezuela, Puerto Rico and other areas of the Caribbean.

Caribbean cruises—on air-conditioned, passenger-cargo ships from New Orleans—on modern freighters from New York, Mobile, New Orleans—on new, air-conditioned, 12-passenger ore ships from Mobile. See your travel agent or write now for cruise booklet "L."

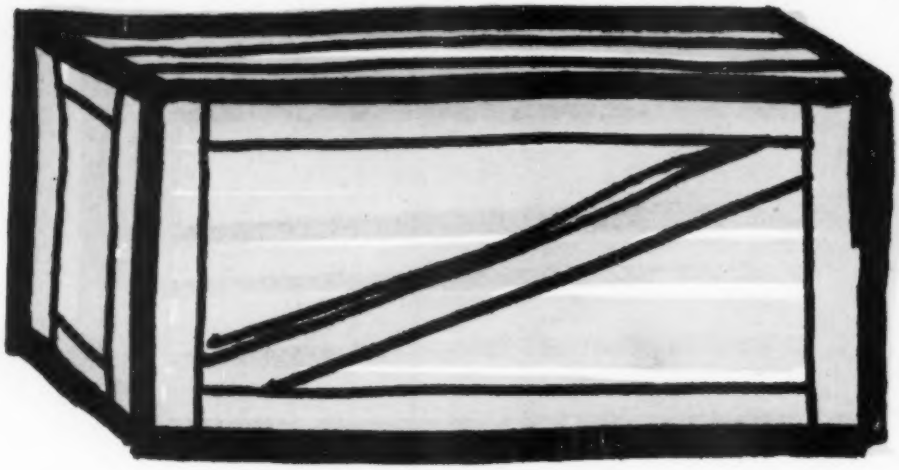
ALCOA

serves the Caribbean

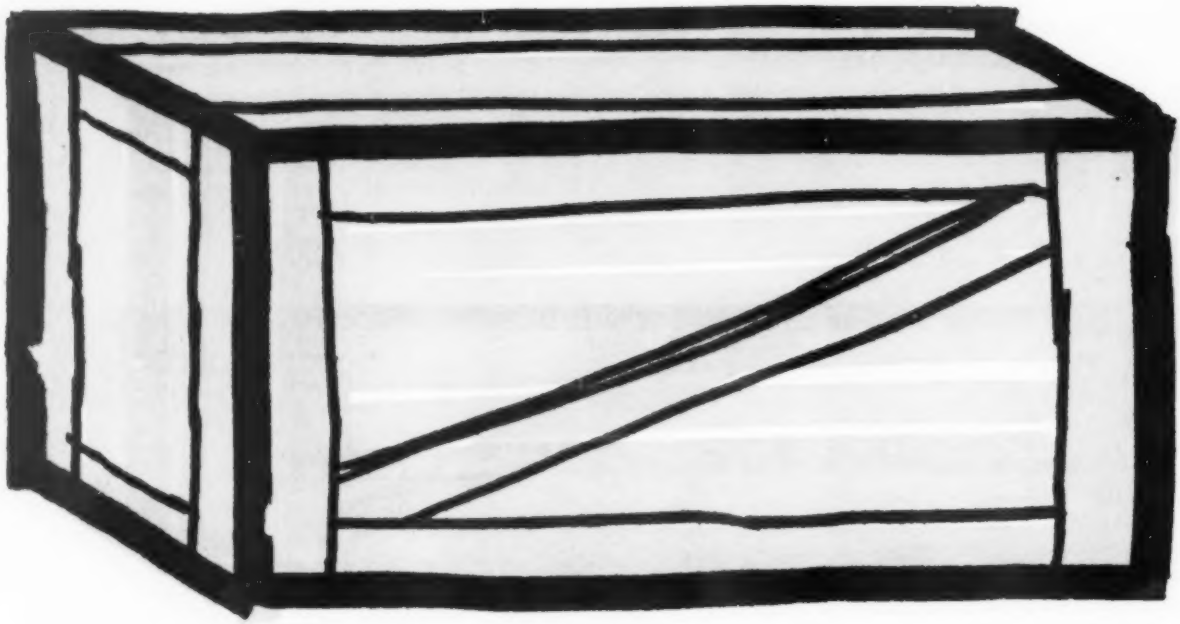
ALCOA STEAMSHIP COMPANY, INC. • DEPT. A, 17 BATTERY PLACE, NEW YORK 4, N. Y., OR DEPT. C, ONE CANAL STREET, NEW ORLEANS 12, LA.

Offices in: Baltimore • Chicago • Kansas City • Los Angeles • Milwaukee • Mobile • Norfolk • St. Louis • San Francisco

if you are now producing this much . . .



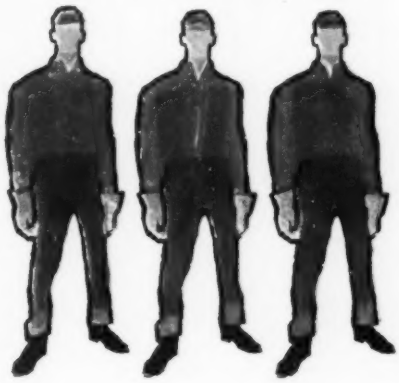
to compete in 1965, you must produce this much . .



POWER-UP!

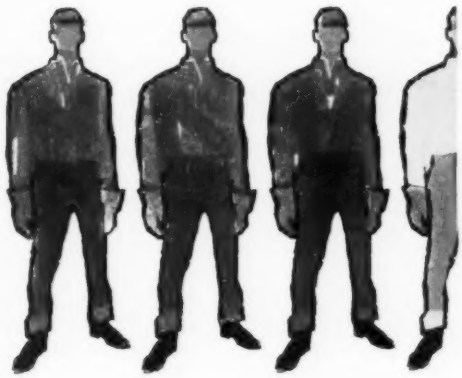
YOU CAN BE **SURE**... IF IT'S Westinghouse

. . with this much manpower . . .

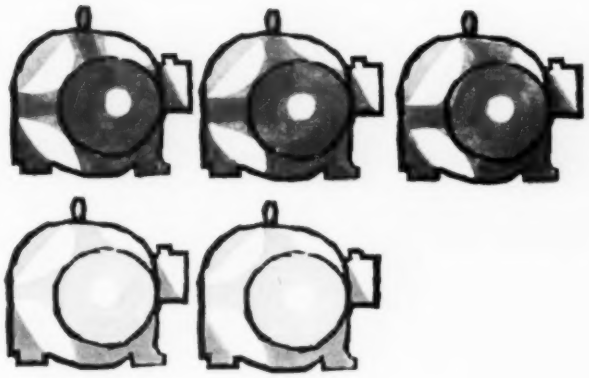


. . . with this much electrical help . . .

. . with only this much available manpower . . .



. . . and 67% more electrical help!



This is *your* challenge — to meet a 40% increase in demand for goods with a work force that is increasing by only one-third that much. Your answer lies in improved production techniques — techniques which call for more and better use of electric power. Are you ready for it?

A decision now to POWER-UP will help you insure plans for growth and profit tomorrow. Your local electric utility sales engineer or Westinghouse representative will be glad to investigate your problems with you. J-97220

There is no substitute for stainless steel
in automobiles

No other material is as bright, strong and resistant to rust and wear as Stainless Steel. It gives every car the clean, exciting beauty that sells in the showroom and re-sells on the used car lot. Look for *Stainless Steel* on your new automobile.

Specify McLouth high quality sheet and strip Stainless Steel. McLouth Steel Corporation, Detroit 17, Michigan.

McLOUTH STAINLESS STEEL

BUSINESS WEEK

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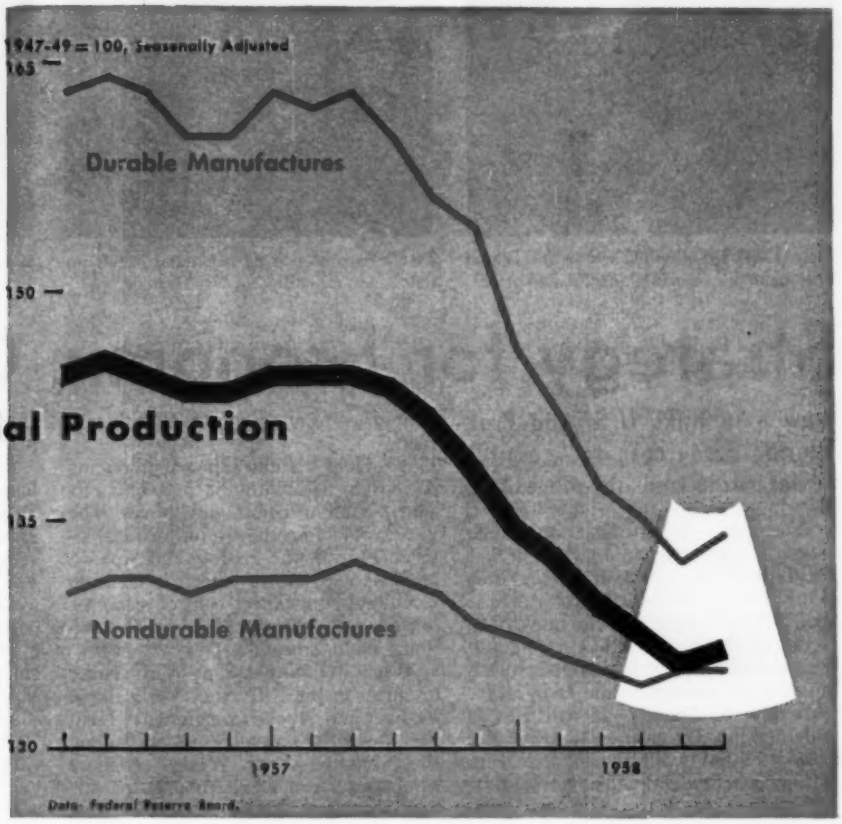


Crucial Figure Turns Up

The most important piece of business news this week is a single figure: The Federal Reserve Board's index of industrial production ended its eight-month decline and notched up one point in May to 127 (1947-49 equals 100).

This is the statistical reprieve that the Administration's economic strategists have been praying for. More sensitive indicators, such as the BUSINESS WEEK index, spotted the firmer trend some weeks ago (BW—Jun.7'58,p26). But the famous FRB index carries a political weight that no private statistics ever do. It is the official measure of the U.S. economy, the guide to policymaking, the standard for measuring success or failure of the government's economic strategy.

• **Prophets Vindicated**—The one point gain in May strengthens the hand of the Administration advisers who have been predicting that things won't get any worse (page 19). With this new evidence to back them up, they will be less willing than ever to give ground on tax cuts or other high-test anti-recession measures. For if this is in fact the bottom, then the Administration stands to win its gamble that the downswing in business would be relatively short and that the recession would not begin to feed upon itself.

The government economists take particular comfort from the fact that the source of the gain was the durable goods sector of the economy. This is where the recession has hit hardest and the outlook for the future has been haziest.

The same factors that nudged the index upward in May promise to give it another modest lift when the June figure is run up (page 2). But even the most cheerful of the government economists still have their fingers crossed. For in politics, if not in metaphysics, there is a limit to how many angels of hope can be made to dance on a single point.

State Dept.'s Dillon is key figure behind new economic program for Free World.

IMF's Jacobsson will get more funds to refloat an expansion of world trade.

World Bank's Black is to play larger role in financing economic development abroad.

Strategy for Economic Cold War

New plan links U.S. and Free World resources to counter Soviet trade and aid moves.

Washington is getting set to launch a new foreign economic program that could prove as important to the Free World as the Marshall Plan of a decade ago. But this time Britain and West Germany—the Free World's second and third industrial powers—will be involved as economic partners of the U.S. rather than direct recipients. It will be the underdeveloped countries that get the main attention, while the big exporting nations benefit only indirectly.

Nothing as dramatic, or as expensive for the U.S., as the European Recovery Program is in the cards, either. Here's the plan:

• Give new funds, and new responsibilities, to the **International Monetary Fund** and the **World Bank**— with selected countries such as West Germany and Canada anteing up more new funds —relatively—than the U.S., Britain, or other members.

• Coordinate the operations of the U.S. **Export-Import Bank** (which has just received another $2-billion from Congress) and the **Development Loan Fund** more closely with the two international institutions.

• Work on a plan (proposed by Democratic Sen. Mike Monroney of Oklahoma) to set up a new **International Development Association** affiliated with the World Bank.

• Increase the resources of the Development Loan Fund so that the U.S. can make "soft loans"—loans at low interest rates and often repayable in local currencies—totaling up to $1-billion a year.

• Help friendly primary producing nations to deal with the problems created by falling commodity prices. The U.S. would offer short-term financial assistance—from the Ex-Im Bank, for example—to countries affected. It also would support export control schemes, but not price support plans nor international buffer stocks.

• **What It Would Do**—With larger resources in the IMF, the World Bank, Ex-Im, and the Development Loan Fund—and better coordination among the four—the Free World economy would get a real lift. Although there is now some overlapping, this is roughly what would happen:

The IMF could do more to support currencies threatened by temporary balance of payments trouble; the World Bank would lend more to governments (especially of the underdeveloped nations) for long-term economic programs; Ex-Im would finance more private industrial and mining projects (especially of U.S. companies); and the DLF would be able to grant soft loans more freely to politically sensitive spots in underdeveloped areas.

• **Shoring Up**—The immediate goal is to shore up the Free World economy against a trade slump, which has already hit the primary producers and could spread to the industrial nations.

There is a widespread feeling among our allies that the IMF and the World Bank must have more funds soon if they are to help ease the shortage of foreign exchange that now threatens the economic progress of many underdeveloped countries—and if these countries are to go on buying capital goods from the industrial nations.

Such purchases, in turn, would enable Japan and the exporting nations of Western Europe to buy more from the primary producers without fear of dangerously reducing their gold reserves. The British government, for example, would feel safer about pushing ahead with its plans for domestic economic expansion, which will involve an increase in raw material imports. U.S. export industries should also benefit. In short, world trade could be refloated without resort to general inflation and without the U.S. being asked for a vast new foreign aid program.

• **The Key Men**—The new program won't be completed, much less announced, for a while yet. It has been building up slowly, with Deputy Under Secretary of State C. Douglas Dillon (picture) playing the key role. Pres. Eisenhower and Prime Minister Macmillan discussed it in general terms during Macmillan's Washington visit. Some of the West's top bankers, especially Lloyds Bank Chmn. Sir Oliver Franks, had a hand in promoting the IMF-World Bank proposals. Some New York Bankers also are involved, and expect strong support from U.S. financial and industrial interests with a stake in foreign business.

In from the start have been two other key figures—IMF Managing Director Per Jacobsson and World Bank Pres. Eugene R. Black. Black was in Bonn last week talking to West German Economics Minister Ludwig Erhard, and Jacobsson is in Europe this week. These two men may bring the program out in the open next September in New

Delhi, India, during the annual joint meeting of the IMF and the Bank.

Before that, though, the U.S. Treasury must give its approval. (Secy. of the Treasury Robert B. Anderson made no promises to Macmillan in Washington.) Also, key Congressmen will have to be brought in. At present, the Administration doesn't plan to go to Congress until early 1959 with the program.

I. For a Long, Hard Pull

The Eisenhower Administration (and the British and West German governments) is looking beyond the immediate economic problems to the prolonged and bitter economic struggle that seems to be developing between East and West. Despite the explosive situation in the Middle East this week and the potentially dangerous row between Moscow and Yugoslavia (page 123), Washington expects to see the cold war fought out on an economic battleground, not with H-bombs. Of course, the West will still need to keep up its military shield.

The new program, like Eisenhower's five-year extension of the Trade Agreements Act, is meant to put U.S. foreign economic policy on a long-term basis. And there is some hope in Washington that by strengthening the IMF and the World Bank, it may be possible in time to cut to very small proportions the aid granted through the Development Loan Fund.

If the program works, there's even a chance that in the next decade Washington will begin to assume a central role in world trade comparable to that once played by London. From about 1850 to 1914, London banks financed the bulk of world trade and development on the basis of free trade and an almost automatic gold standard.

But Washington, instead of relying entirely on private financial institutions as London did, would be relying on the coordinated use of two international institutions (the IMF and World Bank) plus the Ex-Im Bank and private American capital—with the latter supplying funds for direct investment abroad and for replenishing the dollar resources of the World Bank through purchase of its bonds.

• **Washington's Aim**—This same broad concept, as well as some of the specific pieces of the Administration's program, shows up in the latest report of the Rockefeller Brothers Fund, entitled Foreign Economic Policy for the Twentieth Century. But this report leans more heavily on a planned international system, including the coordination of regional trading blocs.

By contrast, the Administration's program calls for multilateral trade and for a more automatic adjustment of international economic imbalances—though nothing like so automatic as under the gold standard in Britain's heyday. Washington's idea now is much the same as it was at Bretton Woods—to shoot for some of the benefits of the gold standard, including convertibility of currencies and the free movement of goods and capital.

Washington is convinced that neither the industrial nations nor the primary producers will accept the violent ups and downs associated with the old gold standard. Reinforcing this conviction is the pressure from underdeveloped countries for help in maintaining steady economic growth. Just as important is growing determination in the West to make these countries less vulnerable to Soviet economic penetration.

II. Combining the Big Three

From a strictly U.S. angle, there is also a danger that Western Europe—or Western Europe plus the sterling area—might start forming an exclusive trading bloc. The six-nation European Common Market in association with the proposed free trade area could easily turn into such a bloc if world trade were to slump badly.

Fortunately the present governments in West Germany and Britain aren't thinking in such terms today. They would much prefer to see their countries move ahead as world traders. It's this that gives Washington the confidence that it can unite the strength of the West's "economic Big Three," whose combined exports of roughly $40-billion a year constitute 40% of total world trade.

However, if this job is to be done effectively two things are required. First, London needs more contingent reserves via the IMF to maintain sterling as a world currency, and more capital via the World Bank to maintain Commonwealth development. Second, West Germany, whose exchange reserves now almost double London's, needs to be brought in as a major creditor via both the IMF and the World Bank.

III. How It Would Work

Put all these pieces together, and you have the background of the changes Washington wants to see in the IMF and the World Bank. All the details haven't been fitted together yet. But the plans being made in Washington now boil down this way:

International Monetary Fund. The "quotas" of virtually all member countries (these determine the size of contributions as well as drawing rights) would be raised by, say, 50%. That would hold true for the U.S. and Britain. For two or three countries with especially strong reserves—West Germany and probably Canada—quotas would be raised proportionately by perhaps two or three times the increase applied to the rest. Then it's possible that Switzerland, another strong creditor, might join the IMF with a sizable quota.

This way the resources of the IMF might be increased by 70% or more, its role as a currency stabilizer greatly enhanced, and the international reserves available for trade considerably expanded.

For the U.S., a 50% quota increase would mean a new contribution of almost $1.4-billion, with 25% ($340-million) payable in gold (therefore needing a Congressional appropriation) and the rest standing as a contingent liability. The new German and Canadian contributions might together amount to between $600-million and $1-billion.

For Britain and the sterling area countries combined the new quotas would mean a contribution of roughly $1.1-billion. But the sterling area, as a debtor group in the IMF with very large combined drawing rights, would gain a lot.

World Bank. There would be no new gold contributions to the Bank, but the contingent liabilities of member countries would be increased. Member governments now put up 25% of their quota in their own currencies, then agree to let other members draw on their 75% contingent liability.

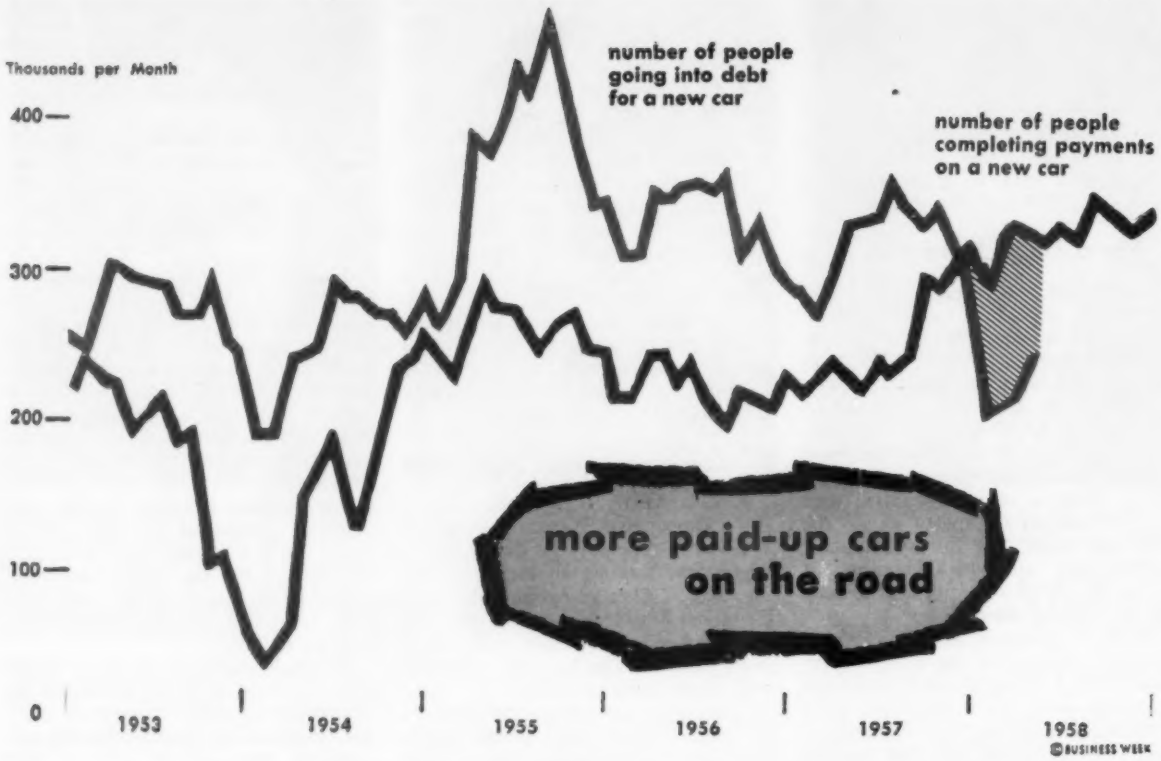
The Bank still has very large resources. But at the present rate of lending—$700-million this year—Bank officials figure that in another three or four years their outstanding commitments probably will exceed their dollar guarantees.

If it should be decided to increase the U.S. liability to the Bank by 50%, that would mean a $343-million cash contribution. But the U.S. could avoid the immediate need for such a large appropriation by withholding the bulk of this until it was requested.

Plans to add a new "soft loan" department to the World Bank (Sen. Monroney's scheme) may not come to life for another year or two. This might call for a U.S. contribution of $300-million out of an initial capitalization of $1-billion.

In Dillon's mind the key part of the new program is the plan to increase the resources of the IMF. He wants it to be the centerpiece of the whole program. He is even thinking of having nations go to the IMF for approval before the U.S. helps them through its own agencies. As Dillon sees things, the IMF can insist that countries adopt sound monetary and fiscal policies before they get U.S. help.

But Dillon sees the whole package as essential—if the U.S. is to have a strong foreign economic policy.



Customers Are Set to Buy Again

That is, if they feel like it. Detroit is cheered by the clearing of old auto debt and the aging of the lush 1955 crop.

The chart above demonstrates one of the economic facts of life that auto men find most cheering: The 1959 models in October and November will roll out enticingly, they hope, in front of a public that has finished paying off on older cars.

Every month this year, more people have made the last payment on an auto loan than have borrowed to buy a car—in some months more than 100,000 more people. Since at least 80% of new cars are bought on the installment plan, this clearing of old auto debt offers Detroit real hope for 1959.

Not all of Detroit's determined optimism finds acceptance in this dismal year when sales will do well to go much beyond 4.5-million. Dealers, particularly, go out of their way to voice their bitter pessimism. As they interpret the market attitude, the customers don't much care what Detroit does about 1959 cars.

• **The Missing Million**—Auto executives may disagree on the reason but they, too, note consumer apathy. However, they turn it around to a potential help for car sales. Consumers have built liquid savings to a very high level (page 62), they reason; they have money, many are debt-free, and credit is available for longer terms and at lower rates (although lenders are fussier) than even in 1955, when easy credit attracted so much comment.

Therefore, Detroit says, the stirrings of the national economy toward revival (page 25) may give the consumer more confidence, get him thinking again about purchases of durable goods.

Besides, there are those 7.2-million cars that were sold in 1955—a million or so more than what Detroit regards as a "normal" year's market. The '55 cars aren't getting any younger. Last week, a Ford Motor Co. official said it doggedly: "Those 1955 buyers simply have to buy new cars some day."

Apparently not too many have done it yet. In 1956, sales of the industry dropped to 5,864,000 and in 1957, a bit lower to 5,787,000. Detroit is still talking about the 1½-million "missing" buyers who made sales bulge in 1955 and then vanished.

• **Marketing Lure**—There's one way to get these buyers back in the market if other conditions are favorable. That's to tempt them with new products.

One trouble with the auto business in the past three years is that, except for imports, the American public hasn't been excited about automobiles.

I. Thorns in the Field

This week, BUSINESS WEEK reporters talked to auto dealers about 1959 prospects. Their key question was whether or not the customers seem to be waiting for the 1959 cars.

The answer of a Pontiac sales manager in Atlanta was typical. By this time of year, he said, "some customers are usually giving us the 'waiting for the new models' treatment, but so far not one has even mentioned the 1959s." A dealer in Chicago put it even more tartly:

"No customers are around asking about the 1959s, and they aren't even asking about the 1958s. Nothing could be deader than next year's models."

Other dealers, however, say they're too busy trying to move 1958s and doing a booming used car business to think about the next models. Still, they confess also to misgivings about the coming season.

• **Under the Surface**—Down deep, says a Milwaukee dealer, "people aren't waiting for new models—they're waiting for new hope."

In Cleveland, another philosophical

dealer sees lean days ahead for a long time. As he sizes things up, people are disenchanted with the national economy, with automobiles, and with automobile dealers.

In Atlanta, the philosophizing boils down to this: "People don't give a damn what Detroit does. They want a price cut more than style."

II. The Dark Side

This matter of price is, of course, an important element of the dark side of Detroit's view. It's almost impossible to see where the auto companies have a chance even of holding prices steady, let alone reducing them.

Regardless of the outcome of the auto industry's tussle with Walter Reuther and his United Auto Workers, steel wages go up 11¢ an hour next month and Detroit will be much surprised if this doesn't boost the price of steel (page 32).

It's unlikely, too, that the industry's own labor settlement will be for less than the 9¢-an-hour boost that GM, Ford, and Chrysler have already offered. The bulk of this—7¢ of it—is a "productivity" increase that is theoretically noninflationary.

But Ford, for one, has claimed that its productivity, or manufacturing efficiency, doesn't increase that fast. So, in Ford's view, some of the 7¢ either has to be added to price or deducted from profits.

• **Other Shadows**—Another possible pall over 1959 hopes is the apparent enthusiasm of Americans for small cars, especially imported ones. An estimated 300,000 imported cars will be sold in the U.S. this year, and no one can be sure that this just represents business that Detroit would lose anyway in its so-called "normal" year.

III. Shell Game

Finally, there's the shadow of doubt about how the 1959 styling will be received. There's an odd quirk here: Even though tail fins were subdued on many 1958 cars, they attain new prominence in 1959 models. That's because the drastically changed '59 designs were laid down back when the big-finned Chrysler cars were the hottest thing around.

More new models will appear this fall than in any other year except possibly the 1955 model season. Customers will notice great changes in appearance, front and back, but the most significant change will be invisible. That is the sharp reduction in the number of basic body shells.

This has important meaning, both for the industry and for the customer. It makes possible, even encourages, more model changes every year rather than on the traditional two-year or three-year cycle.

• **How Come?**—The basic body, or body shell, is the inner structure from the firewall in front to the back of the rear seat. It is the most expensive part of tooling a new car; every other part —fenders, hood, outer body panels, deck —is "hung" on it.

In the past, GM, for example, has made three basic body shells: (1) for Chevrolet and Pontiac, (2) for Oldsmobile and the Buick Special and Century, (3) for the Buick Super and Roadmaster and for Cadillac. In the '59 models, GM will use only one shell, which can be extended by an insert between what would be the front and rear seats. Chrysler went to this one-shell arrangement a year ago, and Ford will use one shell for the 1959 Ford, Edsel, and Mercury. American Motors Corp. adopted one shell for current models.

By having to tool only one instead of several shells, companies can afford to change models completely each year instead of having to amortize tooling for the shell over two or three years.

• **How They'll Look**—The new models in the Chrysler and American Motors lines will use the present shells another year but will make extensive changes in exterior sheet metal. Chrysler fins, most noticeably on the Plymouth, will start near the front door and flare sharply up, back, and out.

GM will offer a new look in all five of its brands. Chevrolet will be even longer and will have canted fins instead of the "rolled" rear fenders. Buick, too, will have pronounced fins, and its headlights will be paired vertically. All GM cars stress headlight treatment.

At Ford Motor, the Lincoln and Continental are slated for refinement of what is basically a "clean" design, along with sharper distinction between the two cars in the treatment of side panels. The major redesign is on the Ford car, of course. Ford Div. officials are chagrined by the poor reception of the 1958 models, compared with the Chevrolet. You can look for reemphasis of Ford's huge round taillights, for more prominent fins, and for a great increase in glass area. Mercury and Edsel styling themes will be continued, with marked difference in details.

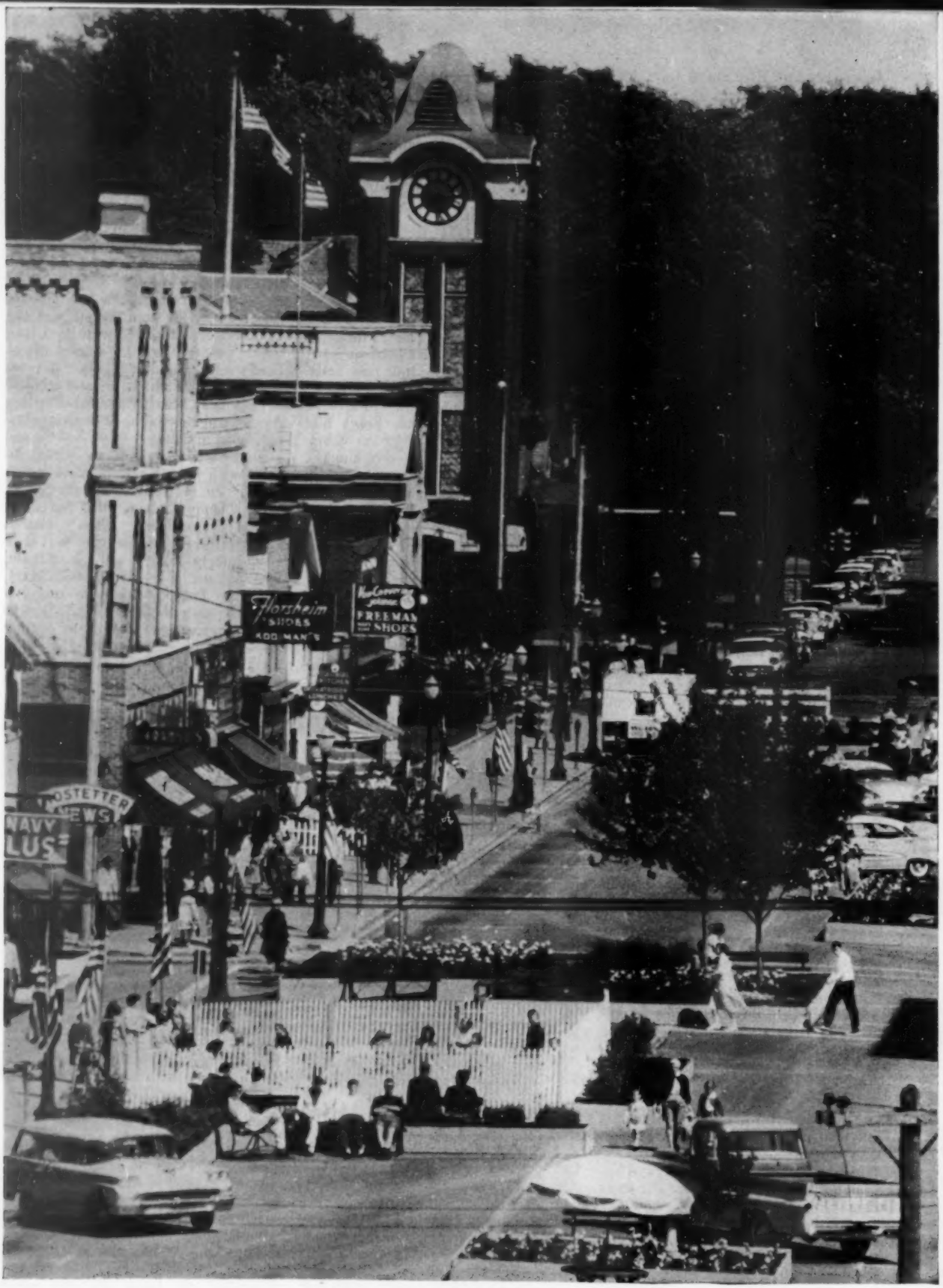
Studebaker-Packard Corp. stirred interest with its announcement of a new "small" car for 1959, using the Studebaker Champion body shell but on a shorter wheelbase. Pres. Harold Churchill insists his company will have a full line, meaning it will also offer the Packard and the other Studebakers. But this ambitious program probably depends on whether Curtiss-Wright Corp. exercises its option to acquire stock control and also whether it is willing further to finance the debt-logged company.

Giving the Troops More Leg-Power

The Buck Rogers influence may not have got men into space yet, but a version of the "anti-grav" belt is already here. Developed by Reaction Motors Div. of Thiokol Chemical Corp., Denville, N. J., it's rocket powered. Small nozzles above the wearer's hips (above, left) provide the push.

The thrust enables a soldier with full field pack to achieve physical feats that would be impossible for an unhampered athlete, according to Reaction Motors. An early version of the belt enables the wearer to leap 20 ft. with equipment weighing 30% as much as himself (above, right).

The Army is officially described as "mildly interested" but thus far has earmarked no funds for the jump belt.



GRAND HAVEN, Mich., closes Main Street to traffic, lures shoppers to mall to avoid a ghost town fate. (Cars on mall are for sale.)

Mall Spurs Downtown Sales

The pleasant, flower-spattered area (picture, left) in the quiet town of Grand Haven, Mich., looks peaceful enough. But it is actually the battleground in Grand Haven's fight for survival, to keep downtown shopping alive. Here, as in cities and towns across the nation, downtown traffic threatens to strangle business, spur the growth of outlying shopping centers. The mall you see, with its off-street parking, is Grand Haven's answer.

Across the country, communities big and small are talking of a mall as an answer to downtown's problems. They would construct these malls by closing off busy shopping streets to traffic, leaving an area where pedestrians may roam safely—much as big shopping centers do with their all-too-attractive open plazas.

For all the talk, few plans have yet come to life. Waco, Tex., (picture, right) has taken two cracks at a mall, once last year, once this spring. Springfield, Ore., and Oxnard, Calif., have also tried it. Milwaukee's brave plans got blocked this spring when the city aldermen got cold feet. But Milwaukee still hopes to test a mall next year; its plans call for a permanent one by 1975 (BW—Apr.19'58,p68). Plenty of other cities have malls in the talking stages.

• **Sales Spur**—Grand Haven has a population of only 10,000, but its 10-day venture is one of the most ambitious yet. The project was to have wound up this weekend, but after four days, city fathers decided to extend it indefinitely. One good reason: Mall merchant's sales averaged 25% better for those four days than for the comparable four-day period last year.

• **Threat**—Unlike some communities, shopping centers do not threaten Grand Haven—yet. The threat comes from the three cities that box it in: Grand Rapids to the east; Muskegon to the north; Holland to the south—with Lake Michigan to the west. Several hundred of its labor force of 4,500 already commute to Muskegon. Some 10% are unemployed, so more workers are likely to go farther afield for jobs. And, as one Grand Havenite said, "Business here is dead anyway with Detroit down."

"We wanted to beat out any attempt to develop a shopping center in an outlying area that would draw from all surrounding communities, and probably wipe out Grand Haven as a shopping district," explains John L. Reichardt, one of the largest local merchants, who led the mall campaign.

• **Preparing a Remedy**—The project grew out of a thesis by a Grand Haven architectural student in 1946. The town has been putting the $18,000 it gets a year from parking meters into public parking lots around the downtown area. Then, this year, the plan picked up steam. Some 54 businessmen contributed about 1% of last June's sales. Two banks matched the highest donations, and a couple of voluntary contributors pushed the total up to $4,500. The City Council agreed to shut off Main Street for 10 days.

WACO, TEX., had a repeat mall test this spring—with free merry-go-rounds, displays of farm and sports equipment. As in Grand Haven, results pleased some, not others.

The planners spent $3,000 for landscaping—though oldsters shook their heads. "Can't see why they're planting trees and grass all over the street," one commented. "They just finished ripping them up [actually it was 50 years ago] so people could see their stores."

Readying for the mall involved a lot of things: getting accesses from the main highway to which Grand Haven is adjacent; arranging for free-flowing traffic around the downtown center; offstreet parking; development of rear entrances to stores for people coming from the parking lots; access for emergency vehicles.

The first days were gala affairs, with special sales, prize drawings, and the like. And they drew thousands.

As with all such projects so far, opinion on the results is not unanimous. Most townspeople and merchants are for the mall. But merchants off the mall street didn't like the setup. A couple of fraternal organizations came out against it on the ground it created noise and side-street traffic. One druggist, who had a lot of drive-in business be-

SAFE on shut-off Main Street, children play as mothers shop in Grand Haven mall.

fore the streets were closed, said. "The people who have come around are just the kind that show up for a catastrophe." Several tavern and restaurant owners reported their business fell off to next to nothing.

But even the unhappy druggist admitted his soda fountain business "improved considerably." A dry goods store owner said he sold a Grand Haven woman who hadn't shopped downtown in 20 years $30 worth of merchandise. Best of all, some thought, was that visitors came from as far away as Detroit.

Women shoppers offered one important key. "It's nice to have a playground in the middle of the street where I can leave the children," one said. This safety factor contributed something vital that put them in a shopping mood: a relaxed mind. A dime store manager found, "The thing that's impressed me is the leisurely way people are shopping. We've sold 450 lb. of orange slices. People just want something to munch when they are looking around."

A floor covering shop owner adds, "I've sold more in these last few days because people are more relaxed." And the owner of a gift shop on the "wrong" side of the mall said, "Because people can stroll back and forth across the street, we've had a lot more traffic than we normally would."

• **Still Some Worries**—Grand Haven knows it's not out of the woods. Mall proponents would like to make the project permanent—but city fathers point out they have no legal right to close off a thoroughfare permanently. The big problem is to keep up interest after the initial flurry dies down—and to keep up financing. The town badly wants new merchants to fill two vacant store sites on the mall.

Some merchants worry that if the mall is too successful, bigger neighbors will copy the idea, leave Grand Haven empty. But, concludes merchant Reichardt, "there's no point in acting negatively. We went ahead with our project as a defensive maneuver. Now we have the edge by being there first, and we've got to stay ahead."

Half a Loaf for Hopeful Steel

It looks as if steelmen's prayers for June's higher operating rate to hold won't be answered in July. But they should get part of the price hike they've been craving.

In the first four months of 1958, the steel industry watched its business go unexpectedly into a collapse. Then, this month, it welcomed a junior-grade boom—almost as unexpected. This week, the industry's more sanguine seers were predicting that June's 60%-plus operating rate would show little significant slippage in July, traditionally one of steel's lowest, slowest months.

Heartening as this prophecy was, it had an equally attractive implication for steelmen everywhere: Because production in June is running one-third higher than in the low month, April, prospects seemed measurably brighter for a favorable decision on a price increase in late June.

• **Disappointments Due**—With the price decision less than two weeks away, however, it looks as if steel's more ardent optimists will be disappointed with both the price boost and the July operating rate. The best guessing now goes this way:

• Prices will indeed go up after labor gets its third round of wage increases July 1. But the rise will be half or less of the $10 or $11 per ton some steelmakers insist they need. Instead, the boost will be $4 to $5 per ton—and perhaps as low as $3.50.

• In July, the operating rate will sag back into the 50s, probably 3 to 7 points under June's brisk showing.

• **Confused Vista**—That outlook reflects fairly accurately the way the industry looks at its immediate future—with a mixture of cheer and gloom. For example, on the happy side, Jones & Laughlin will reopen its long-closed Otis works on July 5 (BW—Jun.14'58, p38). But on the other hand, two non-integrated producers will close for two-week vacations next month.

Again, one sales vice-president who had been contending all along that July would be the year's lowest month now thinks it may come within three points of June. But at least three other sales executives predict a July operating rate only slightly—if any—better than the first-quarter's distressing 54.1% average. Another expects the rate to start sliding next week.

• **August Upturn**—For all their disagreement about July, steelmen are in accord on two points:

• July won't begin to be so bad as April, with its 47.8% operating rate.

• And, in August, steel will be pointing back up again.

Why the upturn? Primarily, the reason is Detroit. Unless there's a protracted auto strike, new car models will emerge this fall. If they are to be sold, quite a few of them will have to be made and distributed. And that will take steel.

Secondly, August and September should bring the end of the broad inventory drawdown. For months now steel consumption has exceeded production, and that can't go on forever.

• **Building Boom Helps**—Finally, in August and September steel should still be getting support from the booming construction market. That would mean a continuation of brisk business in galvanized sheets, structurals, plates, reinforcing bars, welded wire fabric, and—they hope—standard pipe.

You even hear pipemakers talking about steadily improving business in oil country goods. One of the most important pipemakers swears he is contemplating a six-day week right now. At the same time, a number of his competitors insist they have seen no such flurry.

• **Price Figures**—On the price front, not even U.S. Steel knows today what it will do July 1. But it does know that the industry swallowed an additional cost-of-living adjustment of 5¢ per hour last Jan. 1 without any offsetting price action. And it faces another 4¢ adjustment July 1—5¢ if the Bureau of Labor Statistics' May price index is up 0.3.

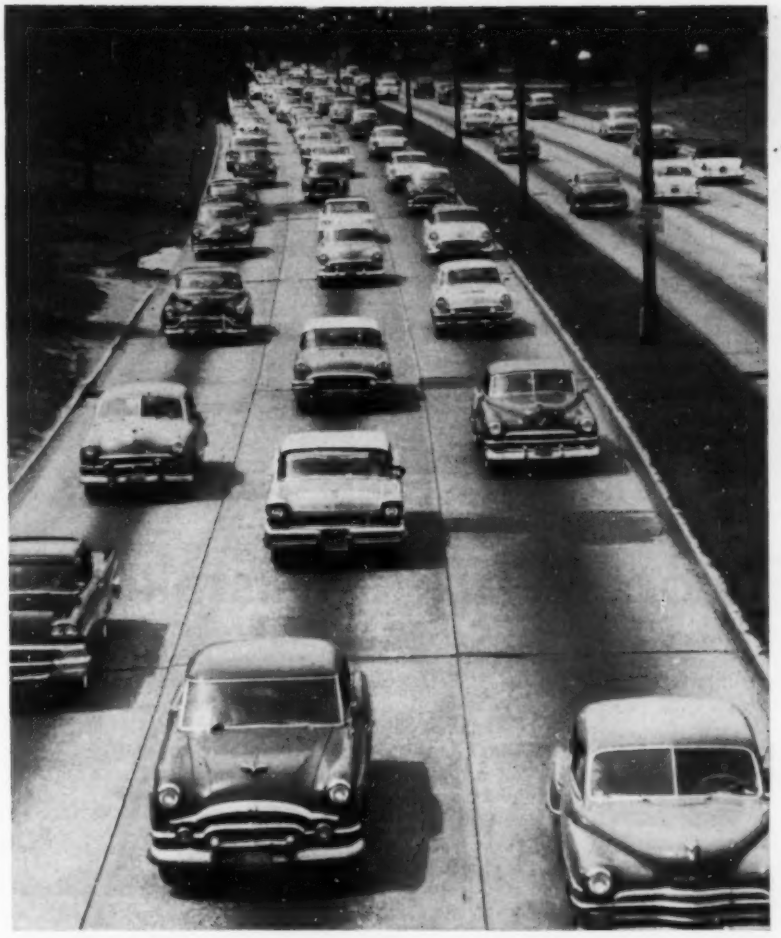
Counting the direct and indirect costs of the July 1 increase, steel's total employment costs have gone up about 25¢ per hour since the last price boost. By using standard industry ratios, you can construct this kind of picture:

• Assume that during the first quarter, U.S. Steel's total employment cost was $3.50 per man-hour, slightly less than the industry's 1957 average, plus January's 5¢ c-of-l adjustment.

• On that basis, a 25¢ increase in employment cost July 1 would raise the total 7.1%.

• If the corporation's first-quarter employment costs had been 7.1% higher, net income would have been about 20% lower.

There isn't any doubt that U.S. Steel is under extremely heavy pressure to avoid a price boost when employment costs go up next month. But even so, it isn't likely to cut profits 20%. So you have to figure that it will try to recover the extra costs. For a few months, anyway, about $4 a ton would do the job.



MOTORISTS will jam highways this summer on pleasure jaunts. But many will take . . .

Shorter Vacation Hops

This year's domestic vacationers are expected to cover less mileage and spend less on accommodations.

When you take to the highways and the thruways this summer you will see no clear and obvious sign that the recession has cut into domestic vacation travel. In fact, there's every indication that the roads will be as crowded as ever as family cars transport an estimated 80-million Americans on their vacations.

Last year's domestic vacation travel budget, according to American Automobile Assn. estimates, totaled $12-billion. Yet, though at least as many people will be on the move—in cars, buses, trains, and airplanes—this year, it's likely they'll spend less than last year. For a hidden recession is shaping up for the domestic travel business this summer—one that's not apparent in the U.S.' foreign travel budget (BW—May19'58,p72).

It will become clear only when you begin to notice that cars bearing East Coast license plates show up in fewer numbers this year in the Rocky Mountains; when, in the summer evenings outside major cities, vacationing families turn and head for home in larger numbers instead of pressing on to a motel; when railroads and bus lines sell fewer long-haul, more short-trip passenger tickets. More people, it seems, will be staying at lot closer to home this year.

• **Spring's Signs**—This trend already shows up clearly in travel bureaus in most of the nation's major cities. In New York and Los Angeles, in Chicago and Houston, those in the business of advising domestic travelers find that their business is up this year—but that a far larger proportion of the people they advise ask searching questions about prices, want detailed information about trips that will take them no more than one or two days' travel from their homes, and seek word of the campgrounds—not the motels—that lie along their way.

In New York, Sinclair Oil Corp.'s touring service reports: "Those who come to us for aid seem much more careful about expenses." In Houston, Gulf Oil Corp.'s service says: "When it comes to finding motels, people seem readier now to forego one with a swimming pool if it saves them a couple of bucks."

In New England, there's heavier demand than ever for housekeeping cottages, which provide one means for vacationing families to save on food costs at resorts. But this has been a growing trend for years and there's no telling whether—or how much—the recession has spurred it.

• **Business for Many**—This year's passion for cutting costs and staying closer to home doesn't mean that motel owners or most others involved directly in the tourist industry will be starving for business this summer. In many areas, they could do better than ever. Resorts in Massachusetts' Berkshire hills report bookings this summer are 23% ahead of last year. Cape Cod's Chamber of Commerce says tourist inquiries are 46% ahead, and for New England's six-state area those inquiries are up 40%. But, says the New England Council: "We're a little afraid people may stay home and read the promotional pamphlets instead of traveling."

In Washington, where tourism is one of the biggest industries, the number of visitors is up 10% over last year, and the capital's Board of Trade expects the total will pass last year's mark of 6.3-million visitors. But, again, indications from tourist service offices in Western states are that there'll be fewer cars from those states funneling into Washington this summer.

A Santa Monica, Calif., travel service finds that just about all the vacationers who come to its offices pay cash for tours; last year, many more used time-payment plans. And to keep their spending under even tighter control, the customers are more interested this year in staying at guest ranches—not because the ranches are offering cheaper rates but because the customers feel they can budget their expenses more closely on this type of vacation.

Texas' travelers, usually prone to cover longer distances than most others, may also be cutting their vacation mileage this year. Three tourist information services in Houston report more inquiries this year for shorter trips. The trend, though, may be saving a reformed city from ruin. Last year, Texas law enforcement officers clamped down on vice operations in Galveston, formerly known as a "sin city." Hotel-

men, merchants, and bartenders all said the city was finished. But this year their cash registers are jangling faster than ever. The new visitors are just ordinary tourists on short trips—they aren't big spenders, but there are many more of them than before.

Even where there are reports that vacationers in the U. S. are taking trips as long as they did last year there are indications, too, of an urge for economies. The Rocky Mountain Auto Club, in Denver, says its members seem to be planning vacations that will take them at least as far from home as last year. But it has found that a substantial number of those tourists plan to cut costs by staying with friends and relatives.

• **The Cause**—Until last month almost all spokesmen for the domestic tourist industry were ready to blame dismal spring weather over most of the nation for any decline in their business. But now that this widespread trend toward cost-cutting has shown up, many more admit weather isn't the only—or even the primary—cause. According to Esso Standard Oil Co.'s touring service: "We tried to hang it on the weather for quite a while, but we can't do that any more."

Nevertheless, poor weather still afflicts some areas. Reservations at California's Lassen National Park are running well ahead of last year and there may be a gain in the total number of visitors this year—if the weather improves. It's a big "if," because a foot of snow fell at Lassen last week.

• **Open Air**—Reservations at most other national parks are up to last year or ahead, the National Park Service says. But this, its officials add, is not necessarily a sign that thousands more people are trying to cut costs by camping. Instead, they say, it's a continuation of a national urge to get outdoors, an urge that first started to show up in vacation habits some five years ago.

• **Who'll Get Hurt**—Though all these regional trends match at some points, it's not possible to fit them together and get a clear national picture of how the U. S. will spend its summer vacation. Vacation habits vary too much from region to region.

But it is possible to see that some items that made up the nation's total domestic vacation budget of $12-billion last year will be down this year. Less will go for gasoline and oil, less for motels and hotels on some long stretches of the transcontinental highways.

When you cruise along in heavy vacation traffic you may figure the recession has had no effect on this part of the economy. But its effect should become clearer if you play that old game of counting the out-of-state license plates on the cars ahead.

WHITE HOUSE "conscience," Sherman Adams (far right) was on carpet this week. Facing a House subcommittee Adams said . . .

Favors Were a Mistake

Sherman Adams, the hardrock moralist and conscience of the Administration, this week admitted he himself has made some mistakes.

He admitted accepting benefactions worth up to $5,000 from Bernard Goldfine, a Boston industrialist and real estate operator who has had troubles with two regulatory commissions. Adams admitted he inquired about Goldfine's troubles with the commissions but denied he had any intent of using his job as White House chief of staff to help Goldfine. Looking back, however, he says these actions were open to misinterpretation—and therefore were imprudent. With this judgment, Pres. Eisenhower agrees.

But in a press conference, Eisenhower also said he knows Adams is honest, that he needs him, that he is invaluable—and that he will keep him in his job as all-purpose assistant.

• **Will It Stick?**—The overriding question left unanswered at midweek is whether Eisenhower can make this decision stick in the face of moral and political issues raised by Adams' relationship with Goldfine. The betting in Washington is that Adams eventually will have to go.

Never a popular man even in his own party, Adams has been deserted by an impressive list of Republicans, many of them facing hard election campaigns this fall. Republican senators, in particular, are demanding that he quit or that Eisenhower fire him.

• **On the Carpet**—In a fight for his political life, Adams made a dramatic appearance (picture) before a House subcommittee investigating regulatory agencies—the first time in 5½ years he had emerged from the sanctuary of the White House to face Congress.

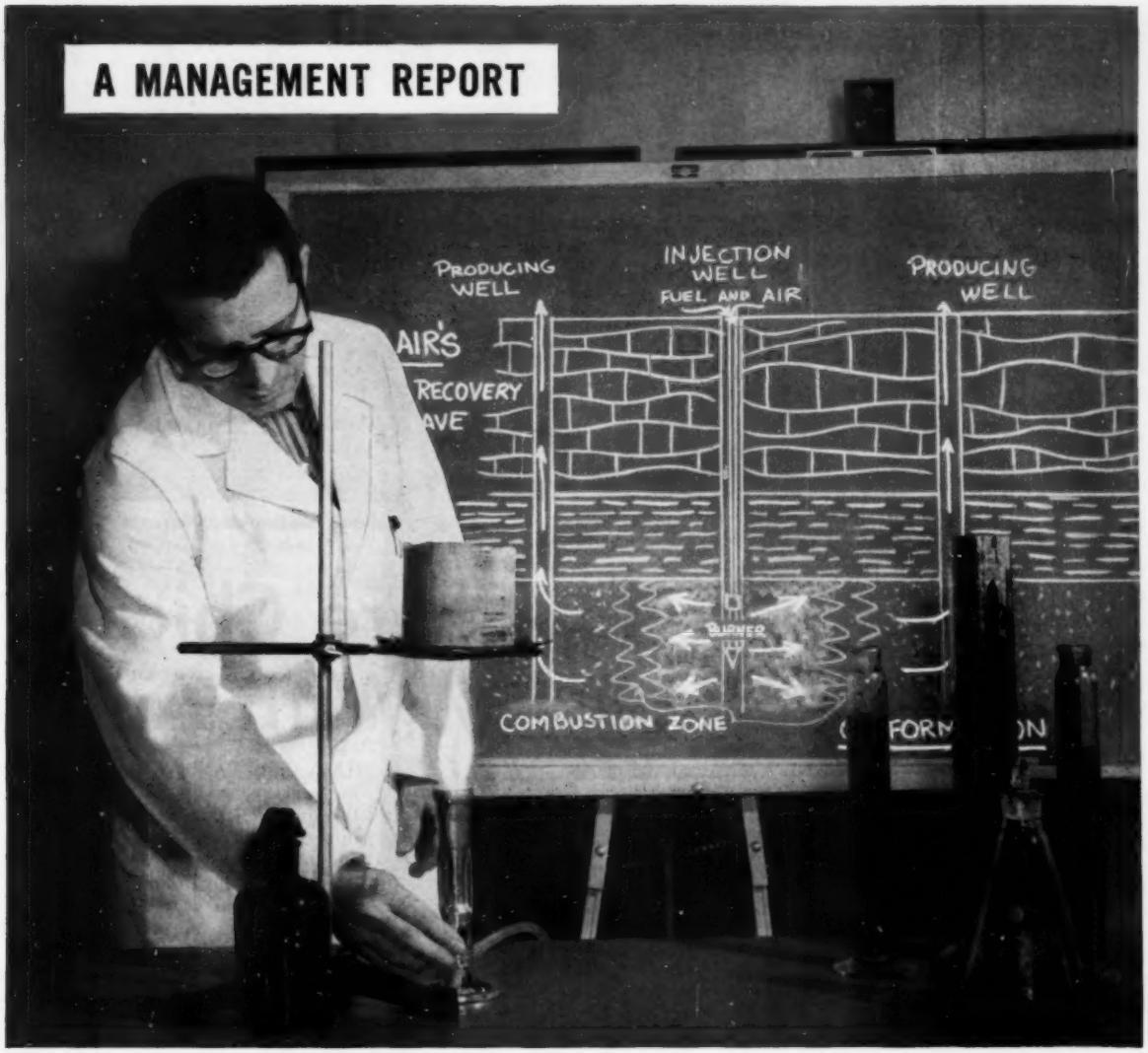
More than 600 spectators who jammed into the House caucus room heard Adams admit mistakes of judgment—though not of intent. He even suggested the committee might have some advice on how a man in his high position should conduct himself hereafter to avoid the kind of suspicions he now confronts.

The flinty glance, the clipped voice, the curt monosyllables of the old Adams image were gone. Instead of the stern New England moralist, Adams was one professional politician pleading his case before others. Who among us, he asked, has not made inquiries in behalf of a constituent?

His responses, almost garrulous at times, were delivered in a resonant bass remindful of his love of choir singing. He left the impression of a man chastened by experience, too wise in the ways of politicians to expect sympathy but pleading for fair play, seeking light on ethical problems that confront every public man.

• **Goldfine Troubles**—In the drama of Adams' abrupt change of public character, the troubles of Goldfine were all but overlooked. He will be summoned by the committee later to tell his version of the gifts to Adams, and to relate his difficulties with the Federal Trade Commission and the Securities & Exchange Commission.

Most of his problems concern improper labeling of textiles, and resulting FTC investigations of his companies. Adams admits calling the FTC about Goldfine's problems and arranging an interview in 1955 between Goldfine and Edward Howrey, then chairman of the commission. But he denied asking for any special treatment of Goldfine. And Howrey—in an appearance of his



How Sinclair Increases Oil Recovery—With Fire

by WILLIAM H. MORRIS
President
SINCLAIR OIL & GAS COMPANY
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"Crude oil is a stubborn material. It clings so tenaciously to the porous rock formation in which it's found that in many cases more than half of the oil is not recovered by conventional production methods. Now, however, Sinclair research engineers have learned how to use an ancient tool—fire—to pry out additional quantities of the oil left behind. A patented Sinclair 'heatwave' process starts a fire in the oil formation. Then, injections of gaseous fuel and air drive the fire through that formation, sweeping the oil to producing wells. Now undergoing commercial testing, this Sinclair research development promises much fuller utilization of the nation's oil resources and demonstrates our continuing technical leadership."

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own before the committee–supported Adams on this point.

Goldfine's firms were accused by FTC investigators in 1953 of failing to include some nylon in the description of fabrics labeled 90% wool and 10% vicuna. In 1956, FTC filed a formal complaint against three Goldfine firms charging them with mislabeling fabrics containing guanaco.

• **Trap Question**–Robert W. Lishman, the committee counsel, led Adams into a discussion of his inquiries about these cases, then snapped shut a trap. Adams had passed on to Goldfine the name of the complainant and other information he had received at FTC. Didn't Adams know that the name of the complainant in such cases is kept confidential under FTC rules, Lishman asked.

Adams pleaded ignorance. If he had known about the FTC regulations, he would have acted differently, he told Lishman. Later, the White House said the complainant himself had announced his role in the case, so Goldfine had not gained any advantage.

• **How Much Influence**–In a prepared statement, Adams said his handling of Goldfine's problems was entirely routine, without any intent of bringing pressure to bear on the commission.

Rep. John E. Moss (D-Calif.) reminded Adams that a phone call from the President's chief assistant may in itself carry considerable influence. He wanted to know if Adams had told Howrey, for example, of his friendship with Goldfine.

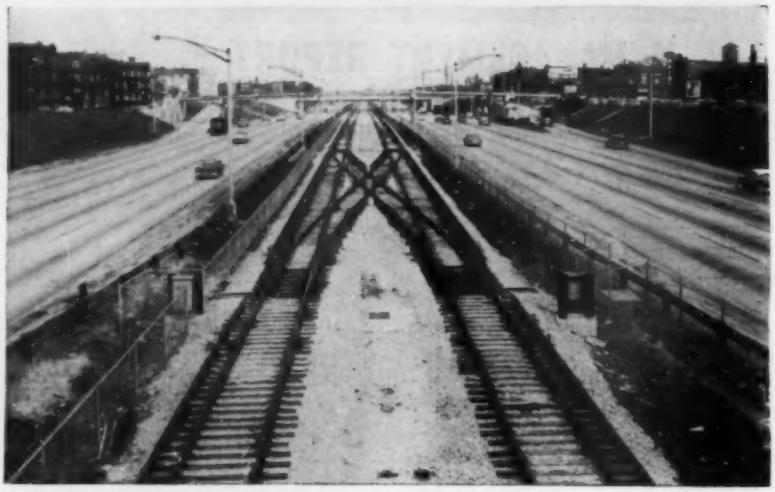
Adams said that he had, and he went on to agree that Moss' implication of unusual influence in a White House call "probably . . . is well taken."

• **The SEC Case**–In Goldfine's SEC difficulties–which ended in 1956 with a $3,000 fine against one of his companies for failure to file financial reports–Adams kept himself more aloof. He said he had asked Gerald D. Morgan, White House counsel, to check with SEC on the nature of the case and, on Morgan's advice, decided not to carry his inquiries any further.

Lishman indicated he would later try to establish that Goldfine had gained special information about the SEC case, too.

Chmn. Oren Harris summed up the committee's questioning by asking Adams if he considered his actions in connection with Goldfine had overstepped the bounds of propriety, in light of their long-time friendship.

"That is a fair question," Adams answered, and launched into explanation of how–some two years ago–he and other staff members in the White House came to the conclusion that they all should "refrain from doing anything which might possibly lead to any question such as you have posed."



SUBWAY is relocated in Congress Expressway's median strip. Starting Sunday . . .

Trains Share Chicago Highway With Autos

A wedding of rail and highway transportation takes place in Chicago this weekend, and transit officials all over the country will be watching to see how the marriage proves out.

Chicago is opening the first section of what city officials say is the world's first rapid transit railroad in the median strip of a dual highway (picture). For 6½ mi., the Chicago Transit Authority will run its subway trains down the middle of the Congress Expressway, between the Loop and the western residential areas. In 1960, the rails in the median strip will be extended another 3½ mi.

The express highway already carries 80,000 vehicles a day, but the rapid transit line can easily top this in a couple of rush hours. The subway is rated at a capacity of 60,000 passengers an hour.

• **Cooperative Effort**–The right of way that's shared by the subway and the express road was tentatively chosen half a century ago, when officials had the idea of a depressed highway to bring carriages and autos safely to the center of the city. In the 1930s, a grant from the Public Works Administration for a West Side subway helped the plan along, and municipal and state governments started planning a combined rail and road system in the early 1940s.

According to CTA Chmn. V. E. Gunlick, the project was launched by a three-way agreement of Chicago, Cook County, and the State of Illinois to finance and build an expressway. Then the CTA joined the other three units in an agreement to put rails in the median strip. Railroads also came into the deal, with relocation of tracks and terminals; the Chicago, Aurora & Elgin RR decided to sell part of its right of way from the western suburbs to the Loop and discontinue its passenger service.

• **Saving Time**–The CTA West Side subway starts off from the Loop underground, then emerges west of the Chicago River for the 6½-mi. run in the center of the depressed expressway, finally turns off to the side to parallel the highway the rest of the way to Forest Park.

In 1960, it will stay in the Congress Expressway to Forest Park, offering a 10-mi. ride in 23 min., a saving of 30% in commuting time. Access to 14 stations is convenient from streets that cross over the expressway. Running time will be cut further by installation of automatic signals in the western section during the next phase of the project.

Chicagoans are also intrigued by two other benefits from the project:

• The relocation of the transit line will eliminate 27 grade crossings. A study this year shows that about 52,000 persons were delayed at 11 grade crossings during one 16-hour period.

• The promise of faster transportation is boosting real estate values near the expressway, leading to talk of new high apartment buildings to meet the demand of commuters.

Short cuts with Recordak Microfilming

Latest report on how this low-cost photographic process is simplifying routines for more than 100 different types of business . . . thousands of concerns

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U. S. Getting New Passenger Liners, Maybe Even Two Cafeteria-Style

Things are cooking rather briskly in U. S. passenger shipping. The fact was stressed this week as the Grace Line's $25-million Santa Rosa got the usual noisy newcomer's welcome to New York Harbor.

By yearend, a $70-million trio of other ships will be in service: The Santa Paula, sister ship of the Santa Rosa, and Moore-McCormack's Brazil and Argentina, slated to replace aging namesakes.

What's more, Pres. Eisenhower is expected to sign the $200-million Congressional authorization for the building of two other liners. If he does, the government will spend about $120-million on a 35-knot, 2,000-passenger ship, and then sell it for $47-million to the U. S. Lines, to replace the America on the North Atlantic run.

For the Pacific, the American President Lines will pay $34-million for a 26-knot, 1,450-passenger ship that will cost the government about $76-million.

Next week, a Congressional committee will begin hearings on an even more spectacular project. H. B. Cantor, a New York hotel man, wants the government to build two big liners offering minimum accommodations and prices ($50 one-way to Europe), with food on an a la carte, cafeteria basis. It's estimated such ships would cost $100-million apiece.

• • •

U. S. Judge Dismisses Civil Suit Accusing Parke, Davis of Price Plot

A federal judge this week dismissed the Justice Dept.'s civil antitrust charges that Parke, Davis & Co. had conspired with drug wholesalers and retailers in Washington, D. C., and Virginia to prevent cut-rate sales of its products. The court held that (1) the government had failed to prove a conspiracy, and (2) Parke, Davis had stopped the challenged practices.

Last year, the Justice Dept. lost a criminal case making the same charges against Parke, Davis. The antitrusters expect to ask a Supreme Court review of the case; they argue that if the lower court is upheld, manufacturers will be able to fix resale prices without the help of fair trade laws.

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Milwaukee's Stalled Urban Renewal Rescued as State Kills Jury Clause

The Wisconsin legislature last week took advantage of a special session called on another matter and got rid of a law that had stalled Milwaukee's urban renewal plan and threatened to deprive all the state's cities of federal aid.

The old law had required that a jury verdict of necessity be secured in order to condemn each and every parcel of land in a renewal project. After the courts had upheld the law, **Milwaukee juries made the city give up 20 out of 97 parcels already taken.**

At this point, the Urban Renewal Administration cut off federal funds for Milwaukee, and threatened to do the same to Madison. Officials said the Wisconsin law was "impractical and unworkable."

It was with this background that the legislature last week took time out from discussing unemployment compensation and empowered the state's cities to do their own condemnation without recourse to juries on the question of necessity.

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Business Briefs

Legislation to set up a unified **Federal Aviation Agency** controlling both civil and military aviation in the U. S. got an unexpected shove from Pres. Eisenhower this week. He urged Congress to pass an FAA law at "the earliest practicable date," which might mean action this year. Previously, the President had planned to seek the air safety legislation next year.

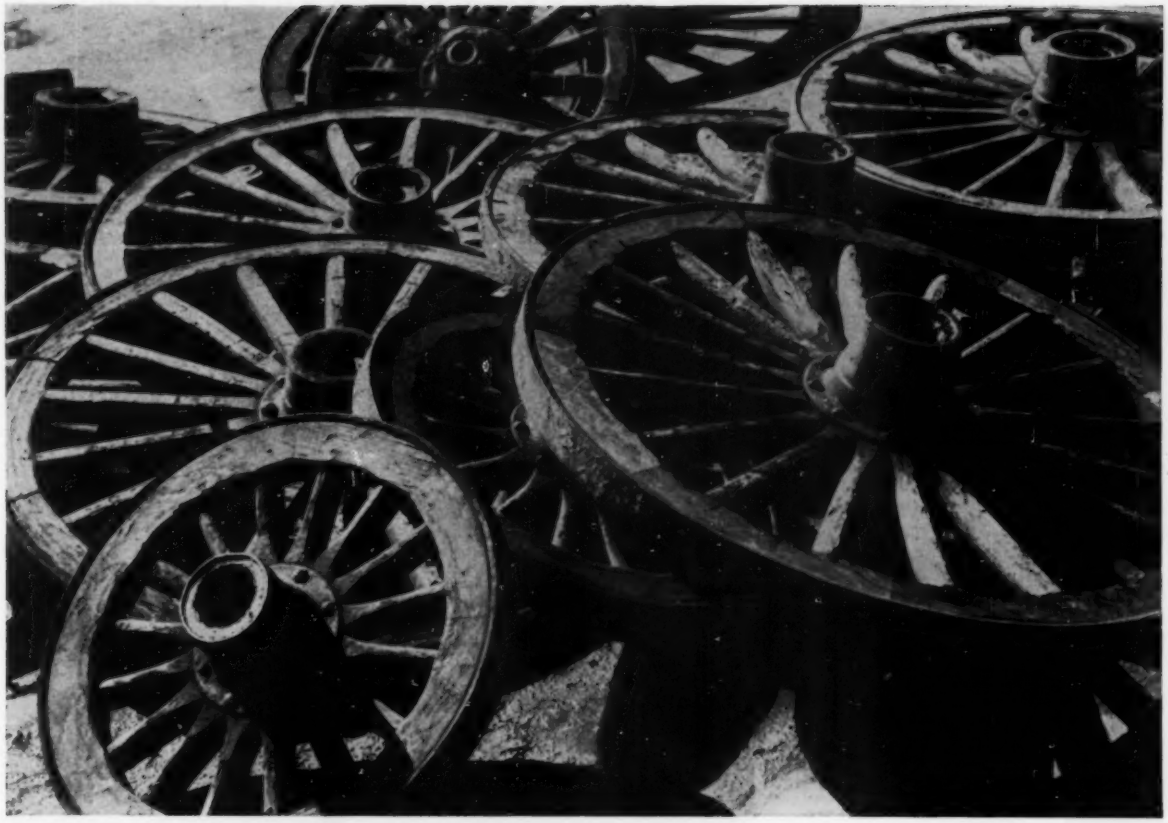
The Texas oil allowable for July has been stepped up to a nine-day producing basis by the Railroad Commission, after three months at a record low of eight days. This amounts to an increase of 121,745 bbl. a day above the June rate of 2,483,053 bbl.

Another attempt to create a metropolitan city-county government fizzled this week, this time in Nashville and Davidson County, Tenn. The county voted decisively against consolidating governments, mainly from fear of higher taxes. Opposition from outlying districts also killed a metropolitan government proposal in Seattle in March.

Rates will go up by 22.3% this fall for some 6-million subscribers to New York's Blue Cross Hospital insurance plan. The state's Insurance Dept. rejected a bid for a 40% rate increase. Blue Cross plans in half a dozen other cities have also raised rates in the last six months. New York's Blue Cross blames climbing hospital fees for the increase, says that to meet claims it has been dipping into reserves at a rate of $3-million a month.

Detroit and Australia forged a new link this week when Fruehauf Trailer Co. and Clyde Industries, of Sydney, formed a joint venture to be called Fruehauf Trailers (Australasia). Within three months, the company will be turning out over-the-road trailers made entirely of Australian components; by the end of a year, production will be running in Sydney and Melbourne at an over-all rate of 100 trailers a month.

Cigarette shipments in April were 35.7-billion, the Internal Revenue Service reports. That's an 11% gain over April, 1957, and the sharpest precentage jump in seven months. The jump pulled shipments for the first four months of 1958 to 135.9-billion cigarettes—2% above the previous year.



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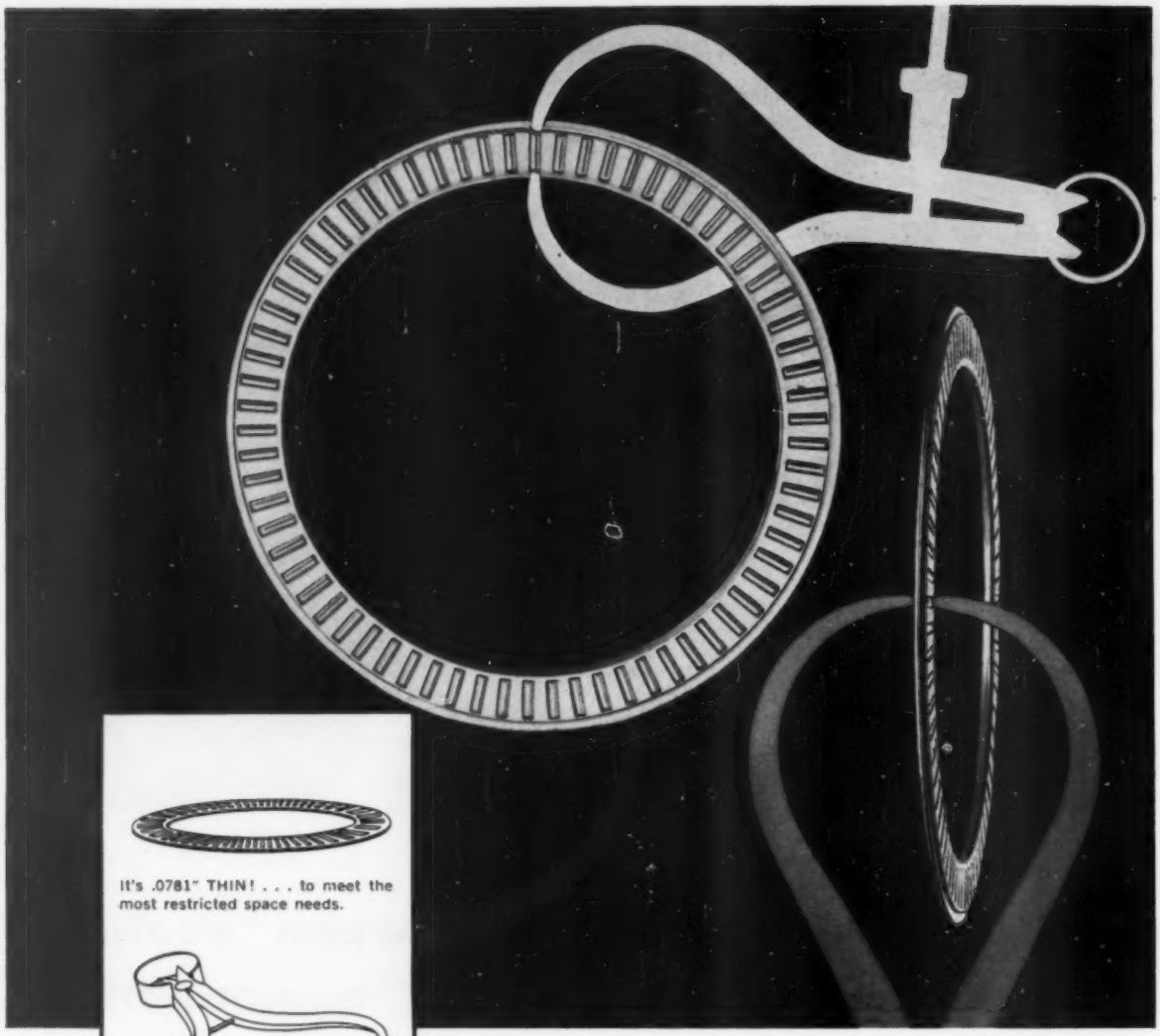

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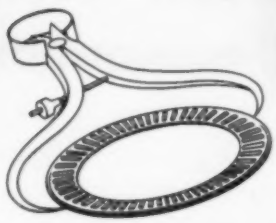

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WASHINGTON OUTLOOK

WASHINGTON
BUREAU
JUNE 21, 1958

Sherman Adams will quit. That's contrary to the headline stories based on White House statements (page 34). But it is the expectation of most long-time observers here in Washington. Their judgment isn't based so much on the rights and wrongs of the incident. But rather that Adams has embarrassed his party, so will pay the price.

—•—

The GOP is badly hurt and at a time when the political tide seems to be running strongly against it.

The Democrats will win the fall Congressional elections. That was already almost certain before Congressional hearings brought out that Adams, the President's right-hand man, has taken a close interest in problems a gift-giving friend has with various federal agencies. But Adams has given the opposition another weapon—one that voters easily understand. It's the same sort of thing that led to the undoing of the Democrats, after 20 years of power in Washington.

There are implications for 1960, when the White House again will be the big political prize. With their majorities in the House and Senate, the Democrats will investigate and investigate. Anything that even approaches questionable propriety will be blown up big.

When might Adams leave?

A good time will be August or September. Congress will go home in another two months or so. With Democratic critics scattered, a resignation about that time would attract a minimum of political comment. And this would be far enough ahead of the November elections that GOP candidates, now badly worried, would get their lines straight about Eisenhower's "hound's tooth club."

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Washington's optimism on business continues to rise. There is no one thing that turns official spirits up. Officials point to many indicators that look a little better:

Industrial production turned up in May (page 25). The rise in the Federal Reserve Index was only one point, but the change in direction is heartening.

Unemployment: Officials say that the May figures showed a great deal more vitality than the bare numbers indicated. Some 1.7-million persons listed as unemployed in April had jobs in May. That's big. Unemployment will show another rise in June, as students come on the labor market, but Washington doesn't worry much about this—it's seasonal and will be offset by departures from the labor force in the fall.

National income continues to point up. After a winter lag, it shows every sign of rising. It's been up for three months in a row. This is no exact measure of consumer abilities to spend. But it does indicate something —and something encouraging.

Retail sales show new strength. That's at the store level, with autos left out. The non-auto sellers aren't having a bad time.

Times are better in the housing field. With credit easier, homebuilding starts are on the rise—a sharp rise. Some builders now look for a year of well over 1-million starts.

Other construction runs strong. The big rise in this field is highway building. Washington has upped its ante, and so have most of the state governments.

Industrial building is a little sour. This shows up in the plans of industry to invest in plant and equipment. But there may be an upturn in the next six months or so.

Washington is disappointed in auto plans. It doesn't know very much about the new car plans of the industry (page 28). But what it hears makes officials think in terms of another bad year. Actually, there's a strong disposition in Washington to blame Detroit for its own troubles. Feeling is that the industry has misjudged the market and dragged the whole economy into trouble.

The pickup in steel (page 32) finds official fingers crossed. Some here in Washington say it is nothing more than the inventory adjustment which could have been expected. Another factor, as Washington sees it, is the threatened price rise July 1, after the steel workers get their automatic pay rise.

Eisenhower advisers are reluctant to forecast. They seem pretty sure that the decline is bottoming out. They are cautious in talking about an upturn. But Eisenhower still worries more about government-made inflation than about the current softness in business. The brighter look to the statistics will harden the Administration's determination not to take any more sweeping measures to deal with the recession.

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The renegotiation law will be extended again—for two years. That is the law that allows government procurement officials to recapture profits that are deemed "excessive" after the goods are delivered. It is primarily a law affecting Defense Dept. contractors.

Business efforts to get some relief seem doomed. What business wants most are rules that would give a better break to manufacturers under incentive contracts.

A complaint: Settlement isn't made often until as long as four years after payments are received. But renegotiation officials are adamant against exemptions for the incentive contracts. They say exempting these, in effect, would mean there would be no law at all. Congress probably will side with the renegotiation board.

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There's a political price tag on the labor bill. The original plan was to put the bill through the Senate, then let it hang. But the unions feel they aren't being hurt, so will push for House action at this session. Action is not sure at all. But the unions figure passage of a "light" bill now may well stave off "heavy" regulation for years.

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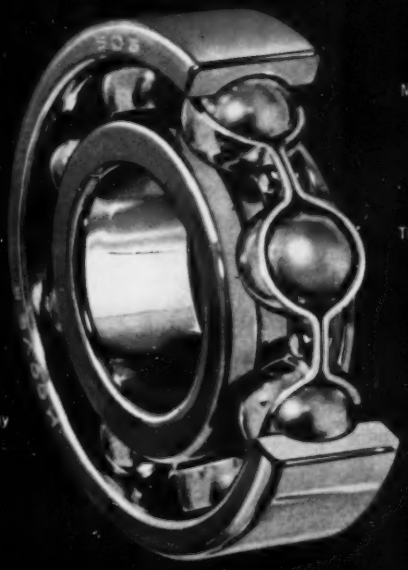
Elliott Company
Emerald Motor & Mfg. Co.
Emerson Electric Mfg. Co.
Fairbanks, Morse & Co.
Franklin Electric Company
General Electric Company
Howell Electric Motors Company
The Ideal Electric and Manufacturing Company
The Imperial Electric Company
Iron Fireman Manufacturing Co.
Jack & Heintz Inc.
Kingston Cooley Incorporated
The Leland Electric Co.

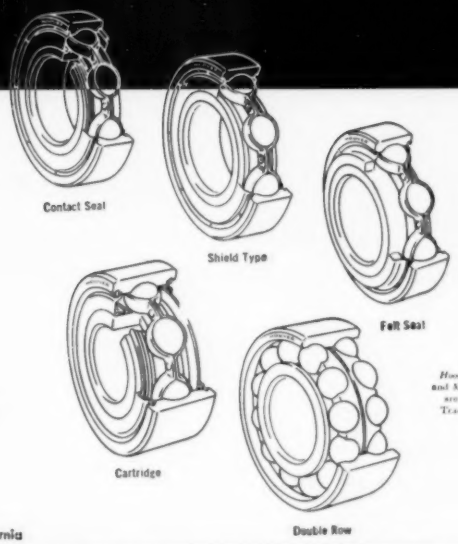


The Lima Electric Motor Co., Inc.
The Lincoln Electric Company
Marathon Electric Manufacturing Corporation
Marble Card Electric Corporation
The Master Electric Company
Oak Electric Motors, Inc.
Packard Electric Division
The Peerless Electric Company
The Piqua Machine & Manufacturing Co.
The Reliance Electric & Engineering Company
Robbins & Myers, Inc.
Reuland Electric Company
The Springfield Electric Motor Co.
Star-Kimble
Sterling Electric Motors, Inc.
Valley Electric Corporation
Wagner Electric Corporation
The B. A. Wesche Electric Company
Bogue Electric of Canada, Ltd.
American Electric Motors
A. O. Smith Corporation
Oster Manufacturing Company
Dayton Electric Service Co.
and many others

Constantly sought by manufacturers and users is velvet smooth operation of electric motors that whispers "*superb quality*."

In many leading makes of motors, as well as other products, hushed quietness is assured through the use of Hoover Quality Ball Bearings. Precision made with super smooth *Hoover Honed* Raceways and perfectly matched *Micro-Velvet* Balls, Hoover Ball Bearings are exceptionally quiet, exceptionally dependable, exceptionally long lived.

You, too, can put these Hoover advantages to work . . . in the products you build, in the equipment you operate.



Hoover Honed and *Micro-Velvet* are Hoover Trademarks.

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Los Angeles Sales Office and Warehouse: 2020 South Figueroa, Los Angeles 7, California

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Hoover Handi-Book of Anti-Friction Bearings which outlines bearing types, problems, applications.
Bulletin 101—Hoover *Micro-Velvet* Balls of chrome steel, stainless steel, brass, bronze, monel.
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Bulletin 100

Handi-Book

Bulletin 101

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Company_____
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BW-6

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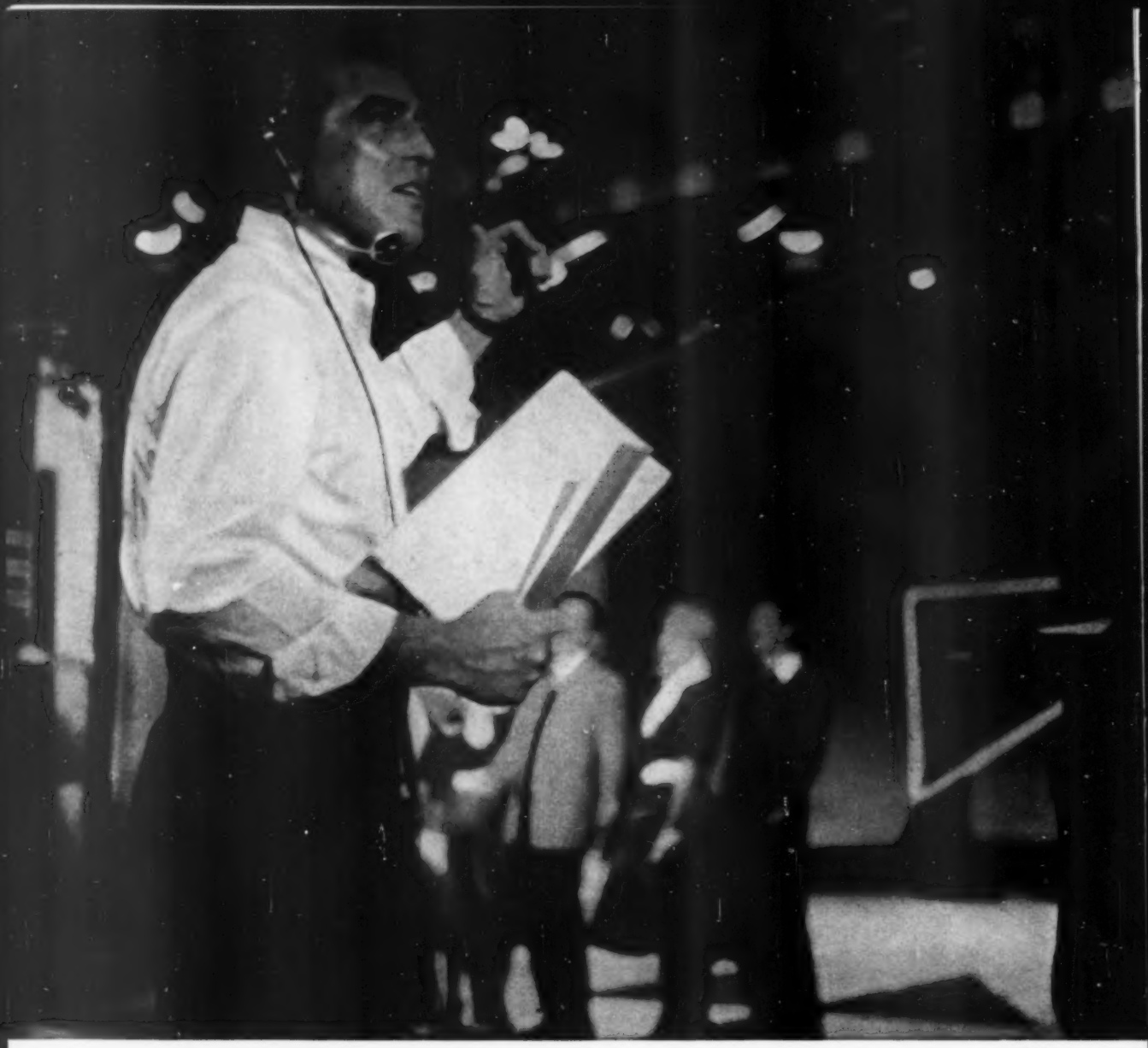

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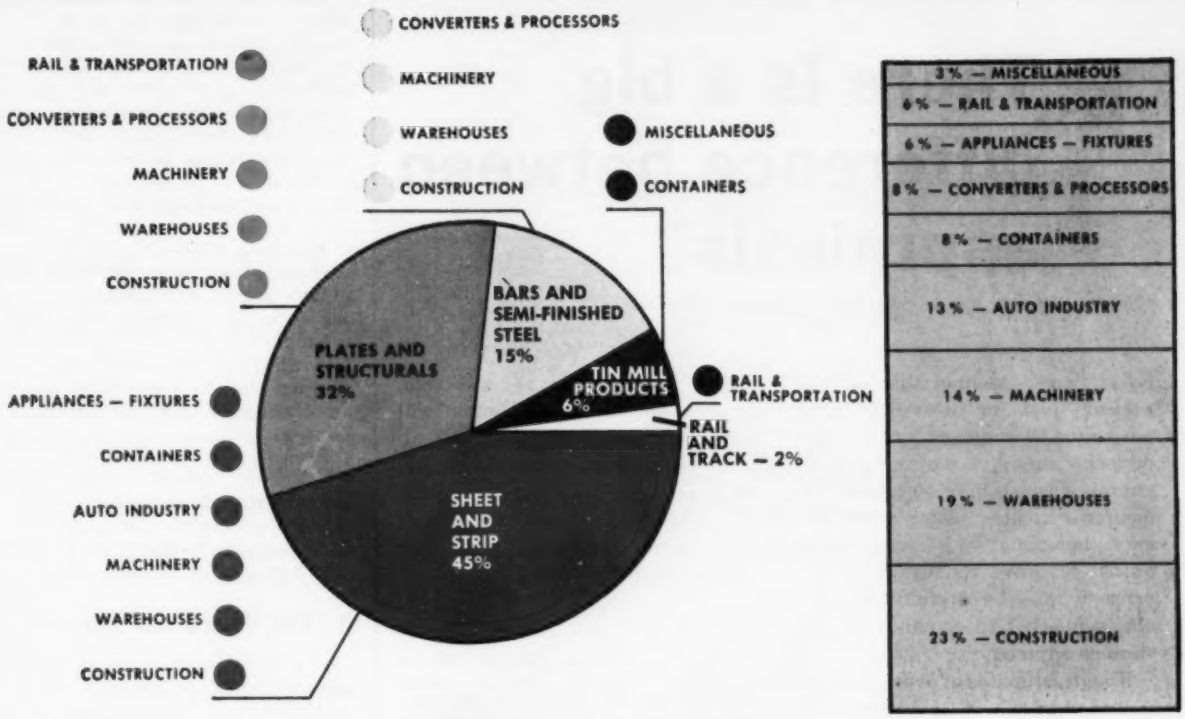

Why Inland Steel Is So Lively

The production mix diagramed above—92% of which is shipped to customers within 400 miles of its Chicago headquarters—is one of the big reasons why Inland Steel Co. this year has been operating at the highest rate among the leaders in the industry.

In fact, the company's showing has been so good officials are almost embarrassed to talk about it. They are even more skittish about giving figures on current production—now at more than 90% of rated capacity, about all Inland can handle until some new facilities are opened later this year.

Next month, Inland—eighth largest in the steel business—will make an important move to improve its already happy situation. Beginning July 1, it will open a new district sales office in Houston and literally barge into Texas. Inland, far from spreading its production thin just to fill sagging order books, is making its bid for the growing Texas and Southwestern market. New capacity and improved inland waterways transportation facilities during the next few years make the move possible.

Inland has looked longingly at the distant Southwest market, but never had enough capacity to cultivate it in any sustained manner.

In effect, it has sold steel so successfully in the immediate Chicago area that there hasn't been enough left to expand farther from home. From its Indiana Harbor mill on Lake Michigan, the company does 50% of its business within 50 miles of Chicago, 65% within 100 miles, 76% within 200 miles, 86% within 300 miles, and 92% within 400 miles. Some 7% of its product is marketed farther than 400 miles from Chicago—but no farther east than Ohio; 1% is exported.

I. Chicago, Chicago!

Inland for 65 years has stuck with the idea that the Chicago area has the soundest steel market in the world. Hjalmar W. Johnson, vice-president of steel manufacturing, makes it explicit: "Chicago's fundamental advantage is that it is in the heart of the greatest agricultural area in the world, coupled with the tremendous advantage of being on the Great Lakes and a navigable inland water system." Inland figures it this way: As agriculture becomes more and more mechanized, the need for farm machines swells—and so does steel consumption.

• **Diversified Backyard**—With some plain old luck, Inland's long gamble has paid off. Within a 300-mile radius of Chicago are the most diversified industries in the nation.

The area includes 25% of the population, six of the top 11 steel-consuming states, and five of the 11 next highest steel-consuming states. Inland also serves two of the largest metropolitan areas—Chicago and Milwaukee—which combined consume more steel than top-rank Detroit or the total used in Pittsburgh, Cleveland, and Philadelphia.

Besides a superb natural marketing area, Inland is close to raw materials and transportation. This gives it a distinct edge on other steel-producing areas. Coal, iron, limestone, and abundant fresh water are close by—and it is easy to ship them, by rail, water, or truck, to Chicago—the nation's biggest transportation center. Other areas have some of these physical advantages, but only the Midwest has them all neatly bundled in such a handy package.

• **Ahead of All**—All of this, of course, helps to explain why Inland can sell more steel and run at higher average capacities in a time of less-than-capacity business than mills in other sections. But the fact is that Inland not only runs consistently above the national average, it also beats out its own

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from the CLIENTS' SERVICE BULLETIN *of The* American Appraisal *Company*

Some people assume that an appraisal "just for insurance" need not be too thorough or detailed. Experience shows, however, that an appraisal which may determine the insured's liability under a coinsurance clause and which may be required to prove the values of the property must be carefully prepared and supported to convince the insurance adjuster.

Rough estimates of over-all value, arrived at by rule-of-thumb methods, will not suffice, as these examples illustrate:

1. The owner of an office building obtained two separate estimates of the value of his property for insurance placement purposes. Each individual acted independently. Their estimates for insurance purposes were $3,500,000 and $1,800,000 respectively—too wide a variance for comfort.
2. Following a recent engagement covering a hotel property, we learned that the owner had a previous valuation report which reflected an insurable value of around $3,400,000 against our figure of $1,500,000 which was supported.

If an owner is insuring property in excess of its true value, he is wasting a substantial amount of premium. If he is insuring on a low estimate of value, he is facing the danger of financial loss in the case of disaster. In either case, he will be required to produce supporting data at the time of loss, including description and actual cash value of each item destroyed or damaged. Unless such details are available, an over-all estimate of value will carry little weight.

When put to the test in the adjustment of a serious loss, rough estimates of over-all value, arrived at by short-cut methods, usually are challenged and refuted.

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district competitors by several points, year in and year out.

Last year, while the industry operated at an average rate of 84.5% of capacity, Inland operated at 100%. So far this year, the national average has skidded to about 54%, with the top producers hard hit. That compares with 58.8% for the Chicago district—and 72.2% for Inland. Inland, with roughly a fifth of the Chicago district capacity, turned out close to 30% of the steel produced in the areas thus far in 1958.

• **Results in Cash**—Inland's high-flying operations—net sales in 1957 were $764-million against $315-million a decade ago—show up in profits, too. Net income per ingot ton was second only to U. S. Steel's in 1957—$10.70 vs. $12.43. And net profit as a percent of sales was again exceeded only by Big Steel's—7.7% to 9.5%.

Even more revealing are sales for the first quarter. Inland is fourth in the industry though it is only eighth in productive capacity. True, sales are off 26% compared to the 1957 period, but they have slipped less than others.

II. The Secret of Success

It is apparent that Inland's remarkably successful performance isn't entirely due to its fortunate location in a diversified area or its concentration on a relatively small region. That doesn't explain why it steadily outshines its competitors.

The key, if one exists, is in the modest statement of Inland's president, Joseph L. Block: "Our happy condition rests in the minds of our customers."

Block insists (although some of his associates might disagree) that Inland's services to customers are no better than other steel producers'. He can't, for instance, point to any one Inland service as being superior to its competition's, not the quality of his steel, technical aides, reputation, or salesmen.

• **Extra Attentions**—But Inland's customers must find some particular reasons for sticking to the company. The figures suggest that Inland hasn't lost any customers in the recession, but just gets smaller orders from them. In fact, some Inland management men think the company will gain close to 100 new customers this year.

A spot check among Inland's 2,500 customers shows why its sales have held up so well. A sample is the purchaser who says: "I chopped less from my Inland orders since January because it came through with some tough-to-get structurals last year when I needed them most."

• **Eggs in Many Baskets**—Beyond this service—which is one way any steel company can create sales—Inland has worked out some nuts-and-bolts customer policies that probably increase

In the West... a new gasoline is setting sales records

In May 1957, Richfield marketed the first and only Boron gasoline in the Far West. It was introduced to the motoring public with dramatic advertising support.

And this "completely new gasoline" lived up to its promise, gave millions of Western motorists smoother, more powerful anti-knock engine performance.

Result: An ever-increasing number of motorists are switching to Richfield Boron. This has produced a substantial retail sales increase and provided Richfield with a larger share of the Western market.

The introduction of Richfield Boron Gasoline is typical of many "firsts" that have helped make Richfield one of the West's leading integrated oil companies.

The Far West—where the name Richfield stands for the best in petroleum

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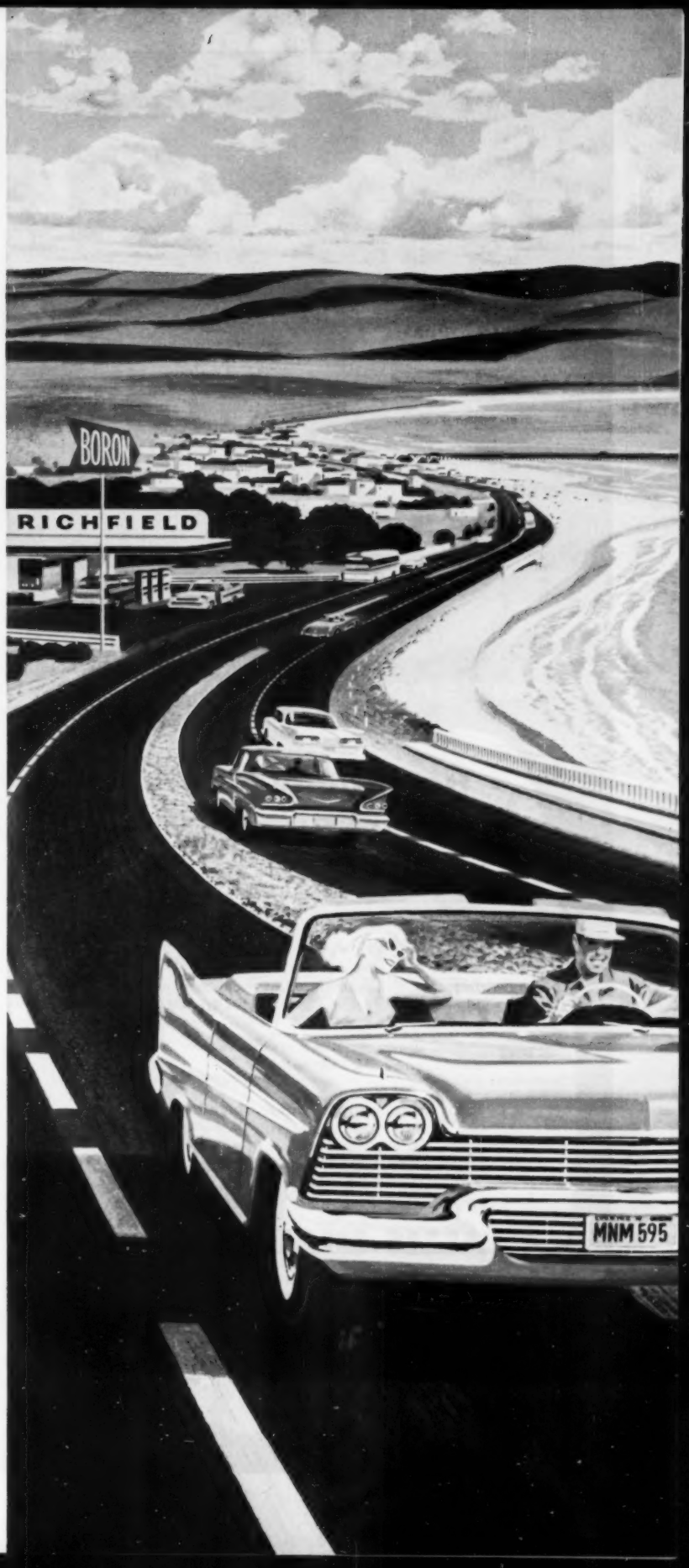

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the sales cost per ton, but have paid off in times like the present. To a greater degree than most, the company has a diversified selling policy—to sell one product to many industries and not to bank on any one company or industry to come across with the "big order."

As the chart on page 47 indicates, its major products are spread pretty evenly among nine classes of customers—and none takes much more than a fifth of Inland production. The four largest—warehouses, auto, construction, and machinery—change places yearly as the best customers and, besides, are broad categories in themselves.

Moreover, except for Inland's subsidiary warehouse organization, Joseph T. Ryerson & Son, Inc., and two of the Big Three auto companies, sales to the four largest categories are in comparatively small quantities. Probably Inland's biggest single customer is Ryerson, which buys 8% to 10% of its output and may act at times as a buffer to even out mill production.

• **Up Instead of Down**—Thus, a dearth of orders from the auto industry this year—so painful for those who have large sheet capacities—hasn't hurt Inland nearly so much. A lot of slack has been taken up by what an Inland executive terms "miscellaneous customers, from bed manufacturers to machine tool companies, who might not place an order for more than one carload of steel per year." As a result, sheet and strip mills, which account for 45% of Inland output, and by rights should be considerably down, have June orders booked so solid that many will spill over into July.

The company's product mix is advantageous in another sense. The products that account for the largest share of production are spread among the largest number of industries. Sheet and strip goes to six industries; plates and structurals are spread among five customer groups. The net result is that 98% of Inland products go to four or more major industries and, conversely, six industries account for 78% of Inland sales and buy two or more of Inland's five major product lines.

III. Why Houston?

In such ideal circumstances, the question naturally is why Inland is bent on getting a bigger share of the distant Southwest market.

For one thing, its current $280-million expansion program is entering its final stages, with $100-million slated for 1958 expenditures. The extra steel, according to Sales Vice-Pres. John F. Smith, Jr., will permit steady service to a fringe market area. Inland has been shipping to Houston, but not on the kind of guaranteed tonnage basis that good steel-salesmanship demands, so a

"Here's the key to the car, Son . . .
but don't forget, responsibilities go with it."

"As a new driver, remember you have some mighty important obligations. Your own safety—the security of others—your family's peace of mind—all of these depend on your care, your caution, your courtesy when behind the wheel."

MOST parents spend some anxious hours when their teen-agers first begin to drive—and with very good reason.

For statistics tell us that it is in the 15-to-19 age group—the ages at which most young people usually start driving—that accident fatalities are at their peak.

One of the first things that should be impressed on young people is the power and speed of today's cars.

If this power is misused—if the driver "steps on it" for a thrill—he is asking for an accident. But if he learns to respect power and the necessity for keeping it under control, he will be a safer, more skillful motorist.

In addition, young drivers need to become thoroughly familiar with the rules of the road, and learn the importance of constant attention to driving. The driver whose attention is diverted can lose control of his car before he realizes it.

Young drivers—especially those who take courses offered in many high schools—make far better drivers than others taught by less competent teachers. If your school does not give safe driving courses, ask your police department where to get competent instruction.

Young drivers gain a lot from parents who set good examples of safety. Parents who strictly observe speed and all other traffic regulations can be far surer that their teen-agers will do likewise when trusted with the family car.

Last year thirty-eight thousand Americans died in traffic accidents and well over a million were injured. We can reduce this toll if all drivers—*young and old*—will drive at all times with care, caution, and courtesy.

To increase the safety and pleasure of your motoring, write for Metropolitan's *Guide to Good Driving*. Use the coupon below for your free copy.

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In any weather, in any season, Pullman takes you where you want to go . . . and you arrive *when you expect to get there.* Make Pullman *your* choice for fast, safe, sure travel!

ARRIVE ON TIME . . . BY Pullman

Have a rent-a-car waiting if you wish!

direct sales office to scrounge for steady orders haven't been called for till now.

By the end of this year, Inland's new open hearths, which will give it a capacity of 6.3-million ingot tons, will be operating fully as a new slabbing mill opens. This means the existing blooming mills—which can make slabs or blooms but not both at the same time—will be free to concentrate on blooms. Besides this, Inland's two-mile man-made peninsula jutting into Lake Michigan at Indiana Harbor will house new facilities for increasing cold-rolled sheet output by 50% and hot-rolled sheet by 45%.

In addition, Inland's facilities now producing rails—a product line that Inland is dropping—will be converted by next year to producing wide-flange beams, one of the major products Inland hopes to sell in Houston.

• **Better Channel**—To get this added tonnage to its new Southwestern outpost, Inland is taking advantage of the gradual improvement of an important waterway link—the Cal-Sag Channel, which feeds barge shipments from Lake Michigan into the Illinois River, then into the Mississippi, and finally into the Intercoastal Waterway to Houston.

Now, Inland is able to send small barges down to Houston in the summer directly from Indiana Harbor through the Cal-Sag Channel. But big barges have to cross the end of Lake Michigan to the Chicago River and thence to the Illinois—and the Lake stretch is feasible only in favorable weather. Otherwise, the load has to be railed part way. And in a severe winter, all shipments must go by rail or truck, sometimes as far as Cairo, to be transferred to barges.

With the dredging of the Cal-Sag Channel to make it wider and deeper, it will be able to handle bigger barges with fewer interruptions from the weather. Inland will then be better able the year around to meet freight costs of Southern or St. Louis mills.

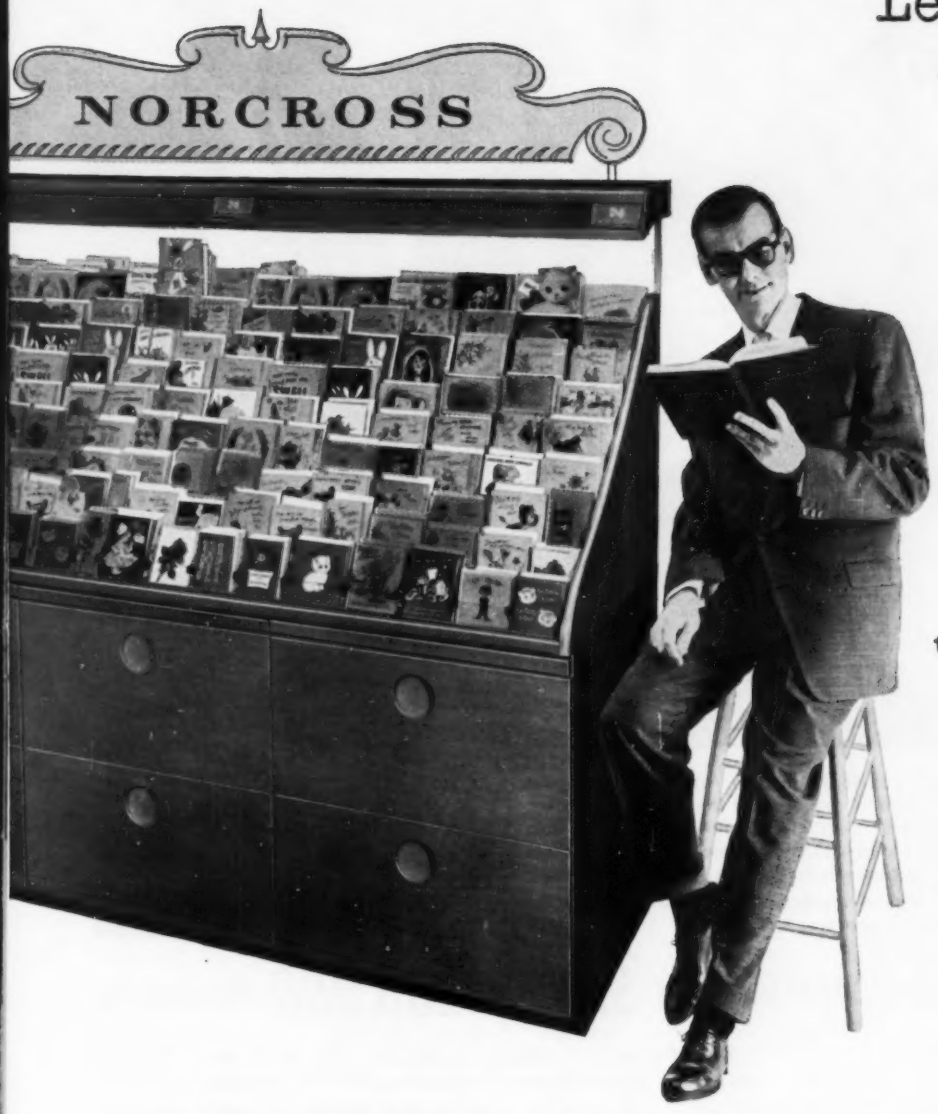
• **Vista to 1977**—Ahead, Block sees Inland's capacity growing steadily—7-million tons by 1962, 8-million by 1967, 10-million by 1972, and 11.5-million by 1977—which may push it ahead of some competitors that outrank it now.

Right now, though, Block thinks much of the increase in steel orders comes from hedging against an expected July price hike, and from refilling depleted inventories. But this week July orders were coming in much faster than a week ago—so July might not be so bad a month as expected, with operations at April-March levels.

Still, the best prognosis Block can make for the industry is a 60% year. He adds quickly: "Inland likely will do somewhat better than the industry average." **END**

"How do we love acetate?

Let me count the ways...



...as film for windows in greeting cards, sleeves for gift wraps, backing for ribbons ...as sheeting for transparent box covers, gift boxes, even as our display's lighting cove."

Norcross and acetate have worked together for a good many Christmases, Birthdays, and Anniversaries. This partnership has produced many sparkling ideas in the design and packaging of greeting cards and gift wrapping materials. Probably one reason for this is the fabricating versatility offered by Celanese acetate. There are so many effective ways manufacturers can employ acetate's sparkling transparency, toughness, and long life. Personal assistance, to help you apply Celanese acetate film and sheeting to your product or packaging, is available upon request. Celanese®

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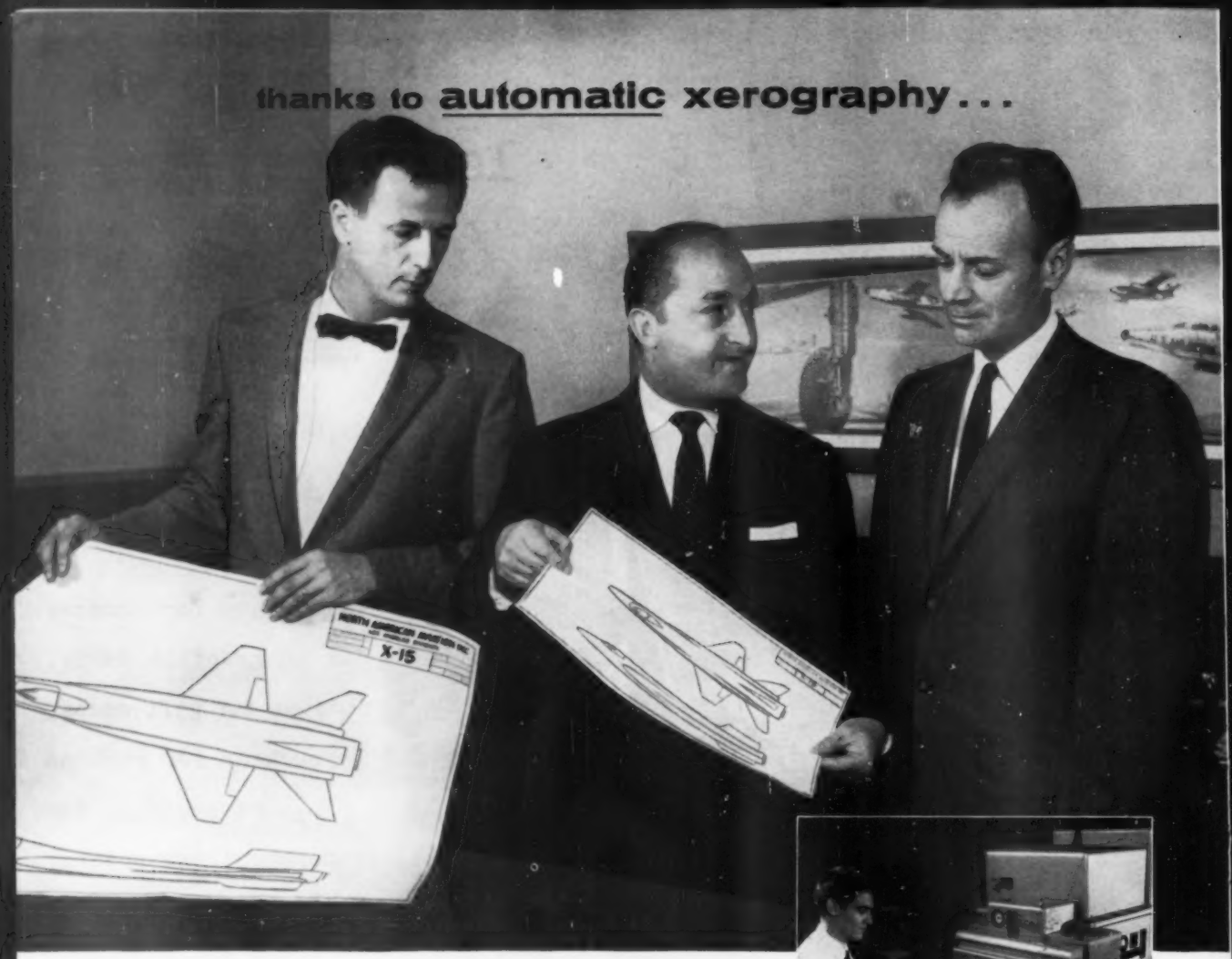

Above: Harrison Storms, right, chief engineer at North American Aviation's Los Angeles division, examines 11" wide engineering-drawing reduction of the company's rocket-powered X-15 made xerographically on XeroX Copyflo 11 continuous printer. Buzz Holland, center, manager of photographic and reproduction services, explains process to Storms while Mark Keith, reproduction supervisor, holds 24" x 36" original drawing. **Inset:** Ron Crawford inserts a 24" wide original drawing into Copyflo printer, which within seconds will deliver a dry, positive print into tray below.

North American Aviation *SAVES* $100,000 Yearly

North American Aviation, Inc., has figuratively gone supersonic in the rapid reproduction of engineering prints for high-speed aircraft.

This widely known aviation firm is one of the first in its field to install a XeroX® Copyflo® continuous printer, an ingenious machine that copies thousands of *different* drawings in a normal working day. Positive prints up to 11" wide emerge dry, ready for immediate use, at the rate of 20 linear feet a minute—a print in less than three seconds!

North American Aviation, Inc., is saving more than $100,000 annually through automatic xerographic copying, easily paying for the equipment the first year.

The Copyflo continuous printer accepts original documents or drawings up to 24 inches wide and of any length, and reduces or enlarges them to a maximum width of 11 inches. Copies are on plain unsensitized paper, offset paper masters, or translucent vellum. Originals may be in type, pencil, colored ink, or on tinted paper, yet copies will be precisely like the originals.

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For complete information write Haloid Xerox Inc., 58-14X Haloid St., Rochester 3, N. Y. Branch offices in principal U. S. and Canadian cities.

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In Marketing

• • •

GE and Proctor Take Steps to Ease Profit Squeeze on Appliance Dealers

Two appliance makers have taken steps to make their products more profitable, especially for dealers.

General Electric Co.'s Housewares & Radio Receiver Div. last week set up a new distribution plan for one of its automatic blankets. **Starting immediately, the company is selling its top model, a new one starting at $32.95 at retail, direct to franchised retailers.** Its other blankets, as well as the rest of the division's wares, will go through wholesalers, as before.

Many in the trade see this as a gesture toward the return of "fair trade." Retailers who get the franchise must agree to observe GE's prices. GE insists its only object is to sell blankets, has no plans to extend direct sales further.

Proctor Electric Co. this week lowered prices to distributors and dealers to allow retailers to make a better profit on its irons and toasters. Distributors will pay 50% off suggested retail price instead of 40%. Wholesale prices will be cut by from 2% to 8%.

• • •

Oil Majors Put Dealers on Their Own In Gasoline Price Wars of Texas

While appliance makers seek ways to steady dealer margins, major oil companies in Texas have been dosing dealers with strong medicine. Their aim: to end gasoline price wars that have sliced 10¢ a gal. from retail prices in Dallas.

Gulf Oil Co. took the initiative. Usually, major suppliers support dealers in a price war area by offering special tank wagon discounts. Gulf simply removed this support. **In effect, it told dealers: "Go ahead with your price war if you want one. But you take the loss."**

Humble Oil & Refining Co., Texas Co., Magnolia, and others followed suit. This week prices in Dallas and other Texas cities are back to normal.

Humble tried such a tack last November but had to backtrack when other majors didn't go along. It is not a popular remedy, and there have been howls from nearby Oklahoma. Nor are the companies sure the cure is permanent. But some feel this is the only way to break up the wars that have been the industry's bane for months (BW—May17'58,p62).

• • •

Consumer Variables Being Studied For Clue to Spending Habits

A new comprehensive analysis of factors that affect consumer demand will be coming up, probably next fall.

Dr. Irwin Friend and Dr. Jean Crockett of the Wharton School of Finance & Commerce are attempting to work up a set of demand relationships that will make possible more realistic market forecasts. The data come from the Life consumer survey of 1956 (BW—Sep.28 '57,p73), and the 1950 figures of the Bureau of Labor Statistics.

Wharton School is studying the impact of such variables as income, age, and education of family head, size of family, residence, race, debts, and assets on spending. **If the relationships of the variables to spending can be clearly established, Friend feels they may have validity for other data.** Given population projections, the Wharton study could provide a more solid clue to what families of given characteristics will spend on food, say, in 1960.

Friend warns that demand factors may turn out to shift too much for firm conclusions. Certain supply factors—a good crop year, for example—also affect the picture, and Wharton will consider these. One check on the validity of the relationships will be how well they hold up for both the BLS and the Life data. Wharton will also correlate these data with the available over-all consumer spending figures.

Ford Foundation and Life magazine are sponsoring the study. Life has first crack at some of the results, but eventually they will be made public.

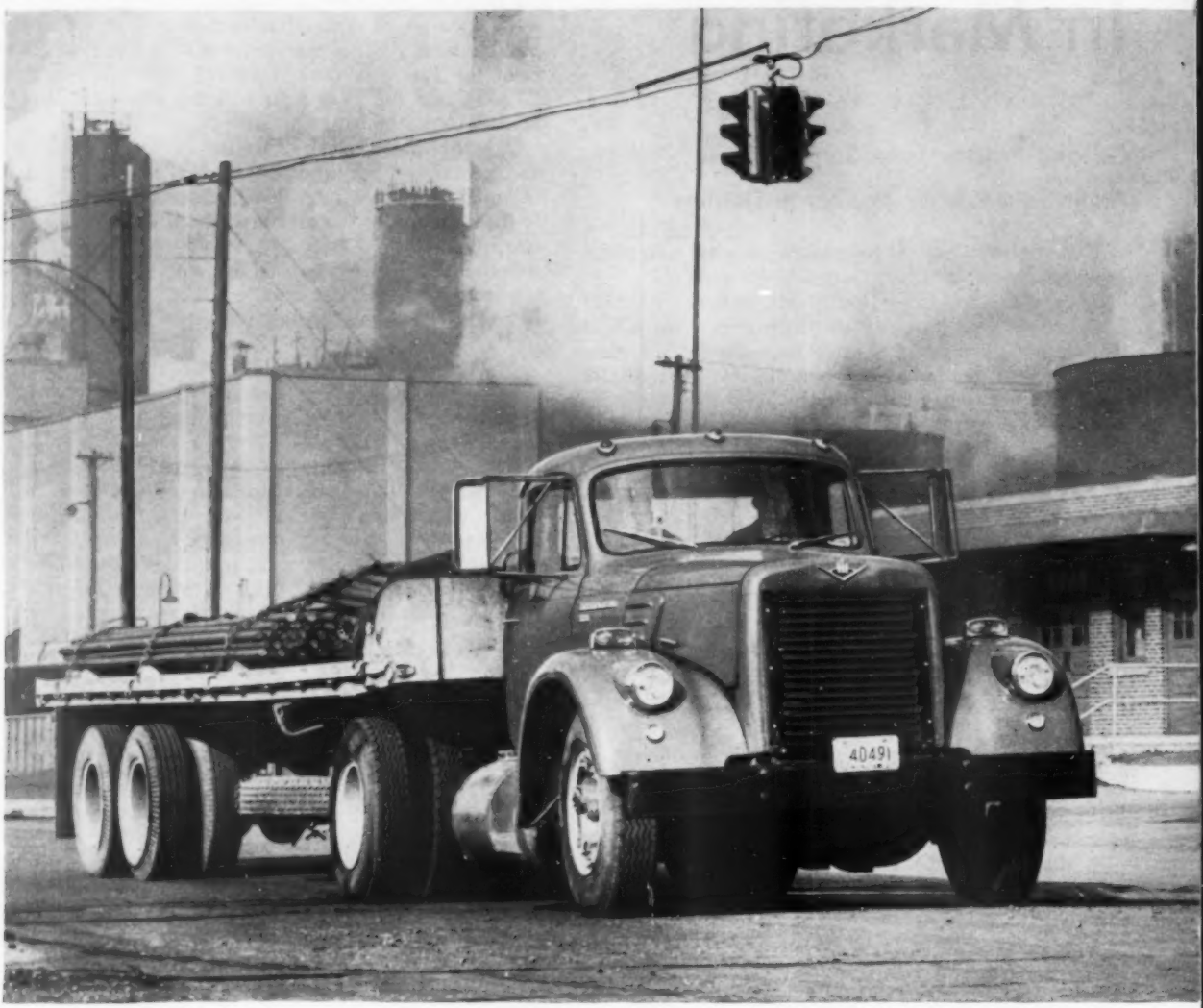
• • •

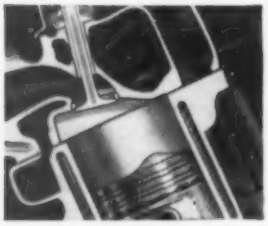
VHF TV Stations in Buffalo Crowd Out NBC's UHF Venture

The cause of ultra high frequency TV got a setback last week when the National Broadcasting Co. announced it was abandoning efforts to make a success of its owned and operated UHF station, WBUF, Buffalo, N. Y. UHF stations broadcast on the 70 top channels of the TV spectrum, whereas VHF stations operate on the bottom 12 channels. The fate of UHF is of much more than technical interest. Many observers believe that UHF's failure to achieve national commercial success, with the consequent TV station shortage, is at the heart of many TV industry ills.

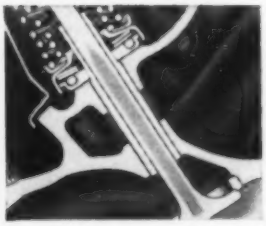
NBC's experience dramatizes UHF problems. As NBC explains it, **WBUF failed primarily because of the competition from two VHF stations in the same market.** VHF stations generally operate at an advantage, dating from the Federal Communications Commission's 1948-1952 freeze on new stations during which VHF got a big head start. For one thing, TV sets have to be converted to receive the UHF signal. Though Buffalo converted 80% to UHF, other small differences, such as the added trouble of tuning to the higher channel and technical problems of signal coverage and set reception gave the Buffalo VHF stations an edge. And even NBC's $3-million investment in facilities and operating costs, full network program schedule, and heavy promotional efforts couldn't overcome it.

NBC emphasizes it isn't abandoning UHF altogether, and has no plans to drop its other UHF station in Hartford, Conn., where competition isn't so stiff. Columbia Broadcasting System, too, says it will hold on to its UHFs in Milwaukee and Hartford. At present, about 90 UHF stations are on the air.

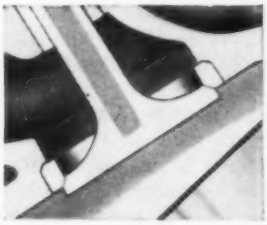




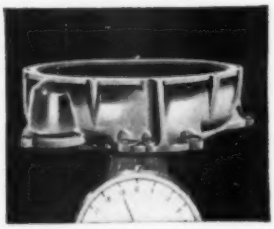
High-Pressure Controlled-Flo Cooling brings coolant direct to cylinder head. Full circulation, evenly distributed for low valve temperature and maximum life. Bypass for faster warm-up and more uniform engine temperature.



"Wet" Replaceable Exhaust Valve Guides allow direct water contact to take heat away faster. Positive valve rotators at base of valve springs keep valve faces and seats free of combustion deposits, add longer life.



Exhaust Valve Faces and Seats Are of Stellite, a material well known for its ability to resist the destructive effects of exhaust heat and gases. Valve seat inserts are undercut for faster, easier removal.



Aluminum Flywheel Housing weighs just 19 lbs. This standard lightweight INTERNATIONAL feature saves 40-50 lbs. of engine weight. Reinforced rib construction provides twice the strength of cast housing.

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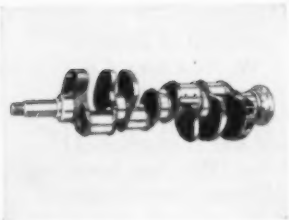
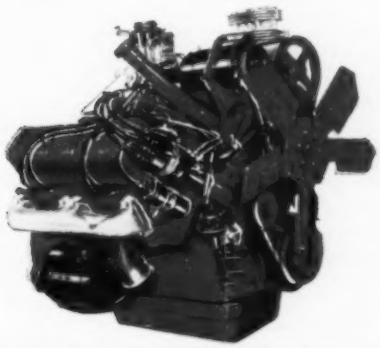
**Signed statements in our files, from fleet operators throughout the U.S., back up this statement.*



High Carbon Steel Crankshaft. Main and connecting rod bearing journals are Tocco-hardened to combine an extremely hard bearing surface with a high torsional strength medium-hard core for long life.



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In Management

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Brotherly Philadelphia Bank Helps Transferred Executives Settle Down

Companies resettling transferred executives in Philadelphia are getting a helping hand from a local bank.

The Provident Tradesmens Bank & Trust Co. organized a new transfer department three months ago to serve as a central clearing house for information about the City of Brotherly Love. Since then it has helped some 200 new Philadelphians find a suburb suited to their family and pocketbook, select a realtor, and arrange a mortgage. The bank also answers questions about taxes, schools, doctors, lawyers, milkmen, grocery stores, and newspaper delivery.

Although Provident Tradesmens offers the service to anyone coming in off the street, it is actually designed for corporate customers—and prospective corporate customers.

The bank makes short-term loans to the transferred executives—usually in the $2,000 range to cover transportation costs and home downpayment, but in at least one case amounting to $19,000. But personal accounts aren't the bank's main object; **management figures the young executives will have influence in their companies in years to come, and hopes that their first experience with a Philadelphia bank will send a corporate account there sometime in the future.**

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Kress Names George Cobb President; Woolworth's Elevates R C. Kirkwood

S. H. Kress & Co., looking for a president since C. G. Trammell resigned in the midst of the variety chain's battle between management and the Kress Foundation (BW—Mar.8'58,p32) found one this week. **George L. Cobb, 47, currently president of Zeller's, Ltd., a Canadian variety chain controlled by W. T. Grant Co., will take over the job later this month.** And Kress' biggest competitor, F. W. Woolworth Co., has a new boss, too. **Robert C. Kirkwood, a Woolworth employee for 35 years and heir apparent since he was made executive vice-president in 1955, has been made president and chief executive officer.** Former Pres. James T. Leftwich continues in the chairmanship.

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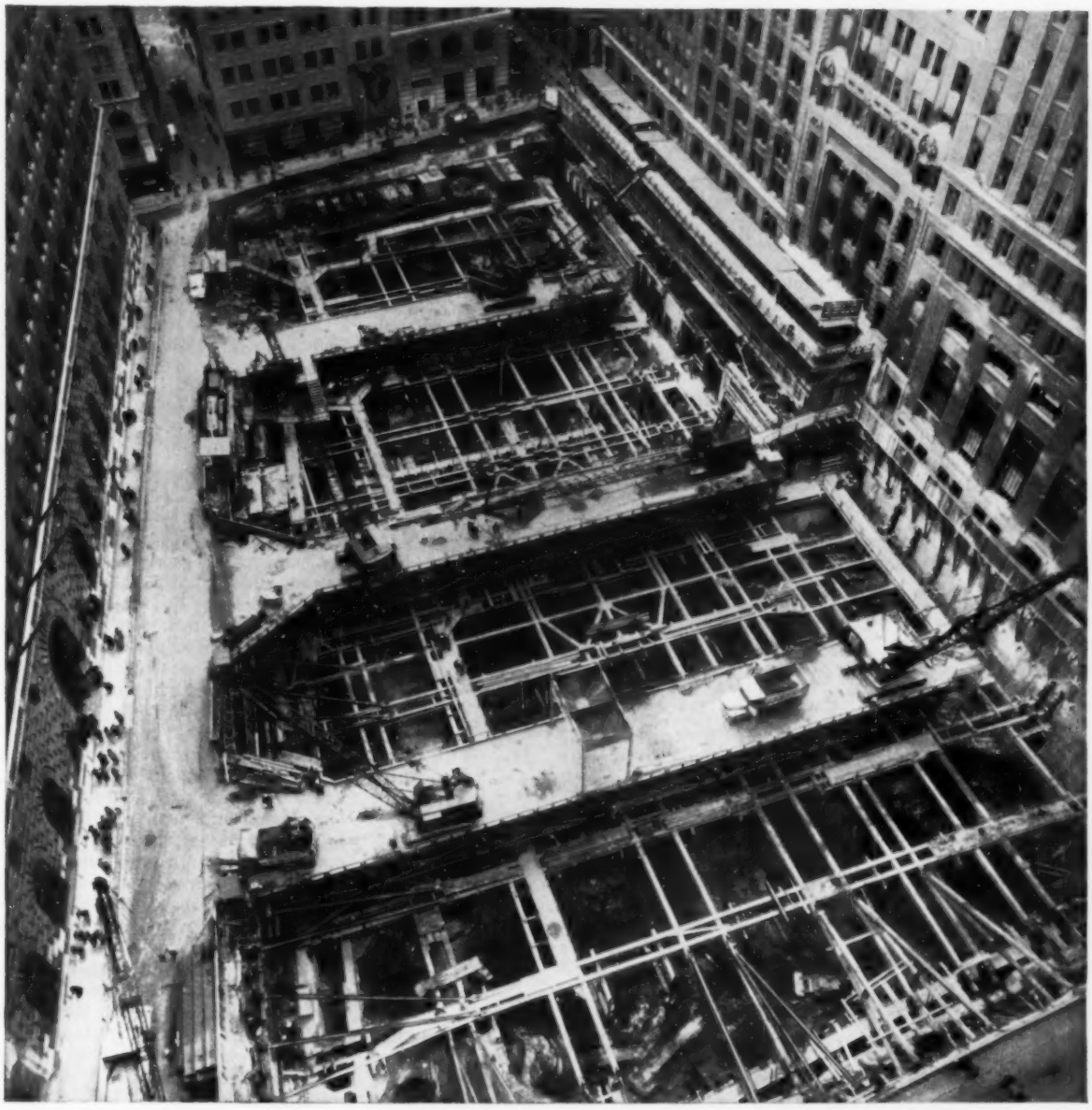
Compensation Granted in Murder Case

The New York State Workman's Compensation Board awarded $20,000 to the widow of a man killed by his employer. The board ruled the death came as a result of the man's employment, on the basis of court papers showing that the employer was angry because he believed the victim was trying to take over the business, a New York City ready-to-wear store. The employer killed himself after shooting the other man.



General view of Chase Manhattan bank site during early construction stages. The foundation contractors for this work are the Foundation Co., George M. Brewster & Son, Inc.; and Joseph Miele Construction Co. The foundation engineers are Moran, Proctor, Mueser and Rutledge.

Steel Piling Cofferdams for Chase Manhattan Bank

To make space for six full stories below street level for the new Chase Manhattan bank building, contractors are excavating a huge pit 90 ft down into Lower Manhattan.

To reach bedrock, the foundation excavation had to go through old building foundations, which were underlain by varved red silt (locally called "bull's liver"), hardpan and boulders. The outer walls on the perimeter of the lot were constructed in deep box cofferdams. The upper portions of the boxes were sheet-piling, driven through the unstable varved silt. The lower portions were soldier beams and breast boards. Part of the solution of a very difficult problem was the chemical grouting of a sand and gravel stratum carrying full hydrostatic head which underlies the hardpan at the easterly end of the site. Excavated material was removed on three ramps.

Bethlehem supplied the steel sheet piling for the cofferdams, the H-pile soldier beams, and the structural steel bracing for the cofferdams.

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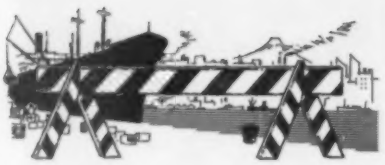

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Even MBAs Feel the Pinch

For the 1958 alumni of the graduate schools of business, job offers are fewer, but not scarce. The trend is away from manufacturing, and into banks, utilities, insurance.

This spring the clammy chill of the recession penetrated into even those cosiest of all job-seeking nooks, the graduate schools of business administration. Not that the schools' latest alumni aren't still in relatively good demand. But for the first time since the war, that demand is markedly less strong than in the previous year; and also for the first time the proffered salaries have failed to climb a bit.

Essentially, this spring's graduates have found two things:

• There are fewer job offers to pick from, far less active wooing by recruiters. A few find no offers at all.

• There's a shift in the areas where the jobs lie. An increasing number of men are going into banks, utilities, and insurance companies, which the MBAs tended to snub in the past. On the other hand, manufacturers—long the favorites—are bidding far less actively.

• **Shrinkage**—Take a look at the quantitative decline in offers. In the postwar world of expanding industry, the MBA has grown accustomed to having three or four solid jobs to pick from. This spring he has been lucky to have two. Even the Harvard Business School—often rated the surest road into management—has noticed the pinch. Each year, it hands degrees to about 500 young men, of whom some 300 go actively into the job market, while the rest are taken by the armed services, recalled into family businesses, or even launch out as entrepreneurs. A year ago, the B-School placement bureau had to hang the jobless label on only five of these 300 premium choices. This spring, there were 25 who had yet to find a taker.

Salaries tell a similar tale. Each postwar year up to 1957 showed its solid increase in the opening salary offered to the average MBA with no previous work experience. Last year the figure went up to around $5,500-$6,000. This spring, the figure is the same—for the first time there's an interruption to the steady climb.

• **New Fields**—Despite the lean days, the MBAs are better off than any other type of job-seekers. That's why the shift in the nature of their opportunities is more important to them than the actual shrinkage of job openings.

Manufacturing for years was the favorite field, and offered the most jobs. Even last year some companies were clamoring to get five or even 10 men "that we can train for the top." Now the same outfits are taking one or two. Placement officers say they're hiring only to fill specific jobs, and expect the new grad to pull his weight from the start.

As a result, students who have specialized in manufacturing courses are finding the pickings unpleasantly lean. On the other hand, those who specialized in accounting and finance are doing well. And more students are shifting to these fields, as they find renewed interest in the once scorned offers from banks, utilities, and insurance companies.

In such companies, latecomers to formal management development, they see management gaps and a chance of getting ahead faster than in other crowded fields. By the same token, companies of this sort are taking stronger interest in management training, stepping up salaries and opportunities, matching increased student interest, with really attractive offers.

• **Added Factors**—The recession isn't solely to blame for the decrease in job offers for MBAs. In manufacturing, where the shrinkage is most marked, lots of companies are finding their management pipelines filled to overflowing, due to intensive recruiting for a decade or more. Moreover, there's a growing trend to fill management gaps—especially at the lower and middle levels—by inside training and promotion.

The promotion from within idea is getting an extra boost from the fact that for some companies the MBA peach is losing some of its fuzz. One executive, who has tried a lot of the grads, says aggrievedly, "A few are really topnotch, but the bulk of them are just well trained staff assistants."

• **Well Trained**—Enthusiasm for the MBAs hasn't waned much, though. Companies still recognize the B-School boys are generally recruited from the top half of their college classes, and that they have been soundly taught what makes a business tick, and how to use the standard tools of accounting, finance, and marketing.

For these advantages, most companies are still ready to pay a premium price. And they're finding an ever-growing number of MBAs to pay it to. Old schools are expanding while new ones keep opening, as at the University of Virginia and UCLA.

The students, it seems, are not discouraged by the current comparative setback. "I just graduated in the wrong year," says a class of '58 member. **END**

People buy Scott Towels for many reasons:

Mr. Byron E. Horn, Purchasing Director of Munsingwear, Inc., says:

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SCOTT PAPER

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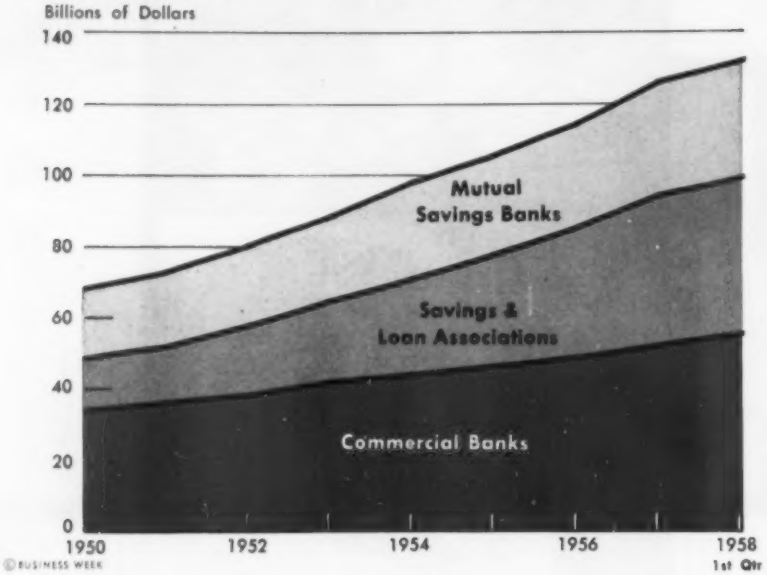
As Savings Rise to New Peaks . . .



Some Rates Are Dropping

More rates paid to savers would be cut if it were not for the severe competition among institutions. No one wants to lead the way.

The stage is set for the first postwar cut in interest and dividend rates on savings. With credit demand and money rates down and the volume of savings (chart) at a record high, savings institutions aren't getting as big a return—and can't go on indefinitely paying out as much.

This week, BUSINESS WEEK reporters talked to officers of commercial banks, mutual savings banks, and savings and loan associations in major cities. Not surprisingly, they found that many—particularly the S&Ls—are already cutting the rates they pay, or are considering such action. But they also found an unexpected number of bankers who intend to maintain present rates.

• **Different Situations**—Each viewpoint toward rates on savings is based on different circumstances:

• The S&Ls led in boosting dividends on savings, and are now hit hardest by the slide in yield from mortgages. They have also had the greatest growth in savings volume. So they are virtually forced to cut dividends now.

• The commercial and mutual savings banks, on the other hand, raised interest rates last year later and less than the S&Ls, gained less in the competition to attract savings. Many of them are reluctant to cut now when they have a chance to draw money away from the S&Ls. Some also have been less pinched by the shrinkage of yields.

Many mutual savings bankers and some commercial bank executives assert that their earnings are strong enough to continue paying the present high rates—not so high as the dividends paid by S&Ls—unless the easy money period stretches out longer than they expect. If they can hold the line, they figure they can gain competitively.

• **Three-Way Fight**—It was only last year that competition among the three main types of savings institutions led to a sharp rise in rates. Commercial banks got into the rivalry when the Federal Reserve Board and the Federal Deposit Insurance Corp. gave them permission to increase rates on time deposits (savings accounts) from 2½% to 3%.

Many commercial banks, which had been losing deposits to both the mutual savings banks and the S&Ls, promptly took advantage of the new ceiling. This led to even higher offers of rates by the others and to inducements, ranging from fountain pens to silverware, for opening new accounts.

This competition is helping to keep rates up, even when institutions have more funds than they can invest profitably and when higher costs of doing business are pinching their profits.

• **First Shall Be First**—Bankers all know that whoever cuts interest rates first is likely to lose deposits to the institutions that hold out. When rates were on the rise, the ones that took the initiative gained deposits from the laggards; now the ones that take the plunge will undoubtedly lose accounts.

But the S&Ls see little choice about it. They rely primarily on mortgages for their income, and mortgage yields and demand have been declining since last fall. Many S&Ls, particularly those who pay 4% or more, cannot be sure of maintaining their present dividend rates in the face of the shrinkage in their investment earnings, and many have already cut their dividends.

The Topeka S&L says it will lower its 3¼% rate after July 1, though it hasn't decided how far. A majority of Milwaukee S&Ls will cut from 4% to 3¼% within a few months. Boston's largest S&L has voted to cut its June 30 payments from 3¼% to a flat 3%. In many other cities, S&Ls are nervously debating whether or not to go down.

• **Window Shoppers**—There's plenty of competition among the S&Ls themselves, and even those that feel a reduction is needed are reluctant to move, for fear they won't be followed. Even more important, they fear that a general decline in S&L dividends would drive money to the commercial and mutual savings banks.

Few bankers feel that lowering the rates will discourage saving—the great national buildup of savings volume began during World War II when rates were very low. But any reduction, they say, is likely to lead savers to shop around and shift their funds, even if it didn't turn them to other types of investment.

"Savers are rate-conscious," says one banker, "and we would feel it the moment we changed our rate."

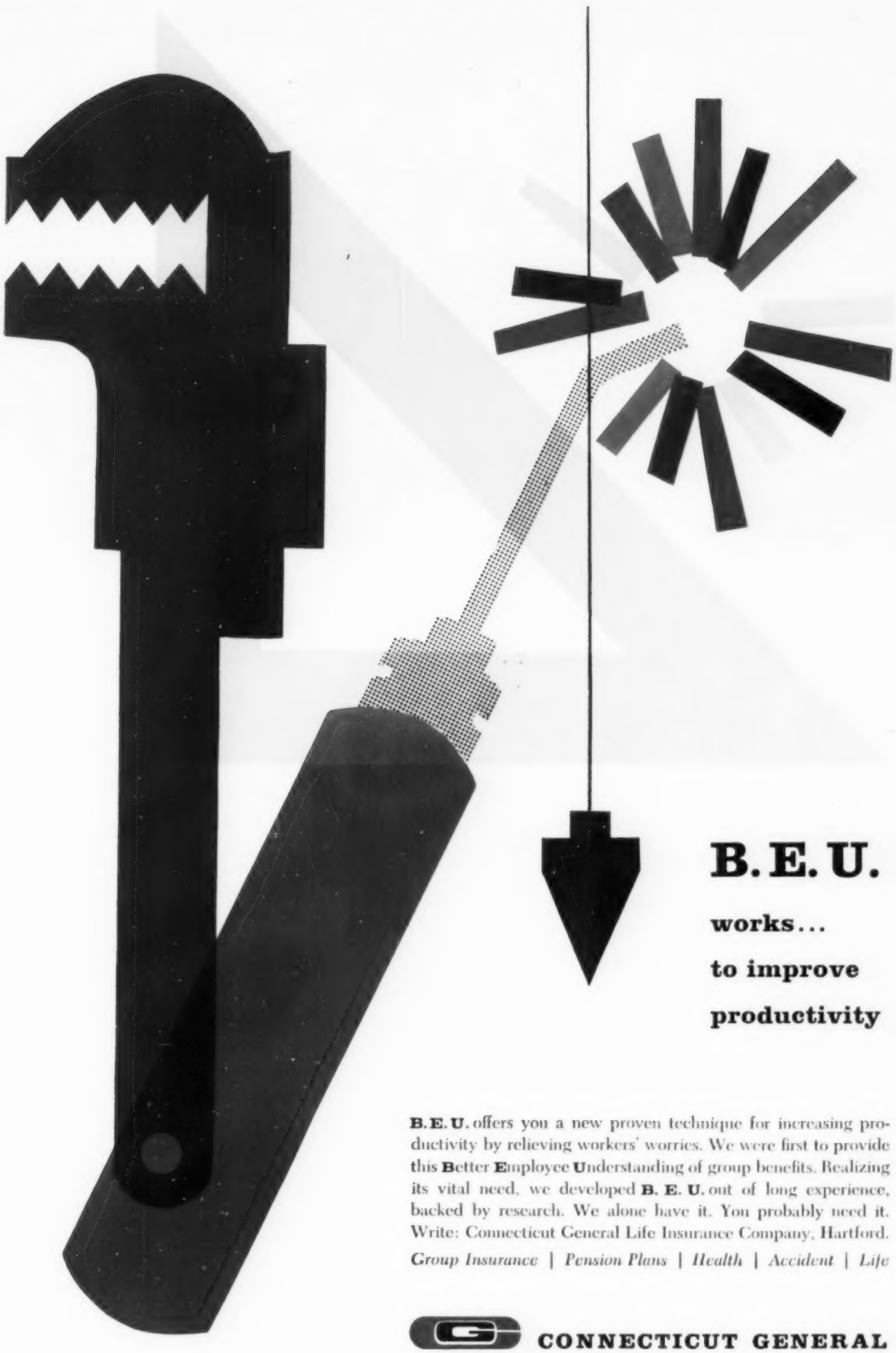
• **All Doing Well**—In the postwar battle for savings, S&Ls have had the sharpest rate of growth, with the mutuals next and the commercial banks lagging. But all have done well:

• Accounts in the nation's savings banks reached $32.4-billion on Mar. 31—up from $30.5-billion a year earlier and from $20-billion in 1950.

• The big commercial banks reported that their non-federal time deposits—chiefly savings—totaled $27.5-billion on May 14, up from $23.3-billion a year ago.

• The U. S. Savings & Loan League says that the assets of the nation's 6,000 S&Ls are now above the $50-billion mark. In 1950, they totaled about $14-billion.

• **Still Going Up**—BUSINESS WEEK's survey found savings continuing to rise. In Milwaukee, the Marine National Exchange Bank says its saving volume is up 28% from this time last year, and the First Wisconsin National Bank has gained close to this figure. S&Ls in the city are up an average of 15% to 20% since last year, says John A. Seramur,



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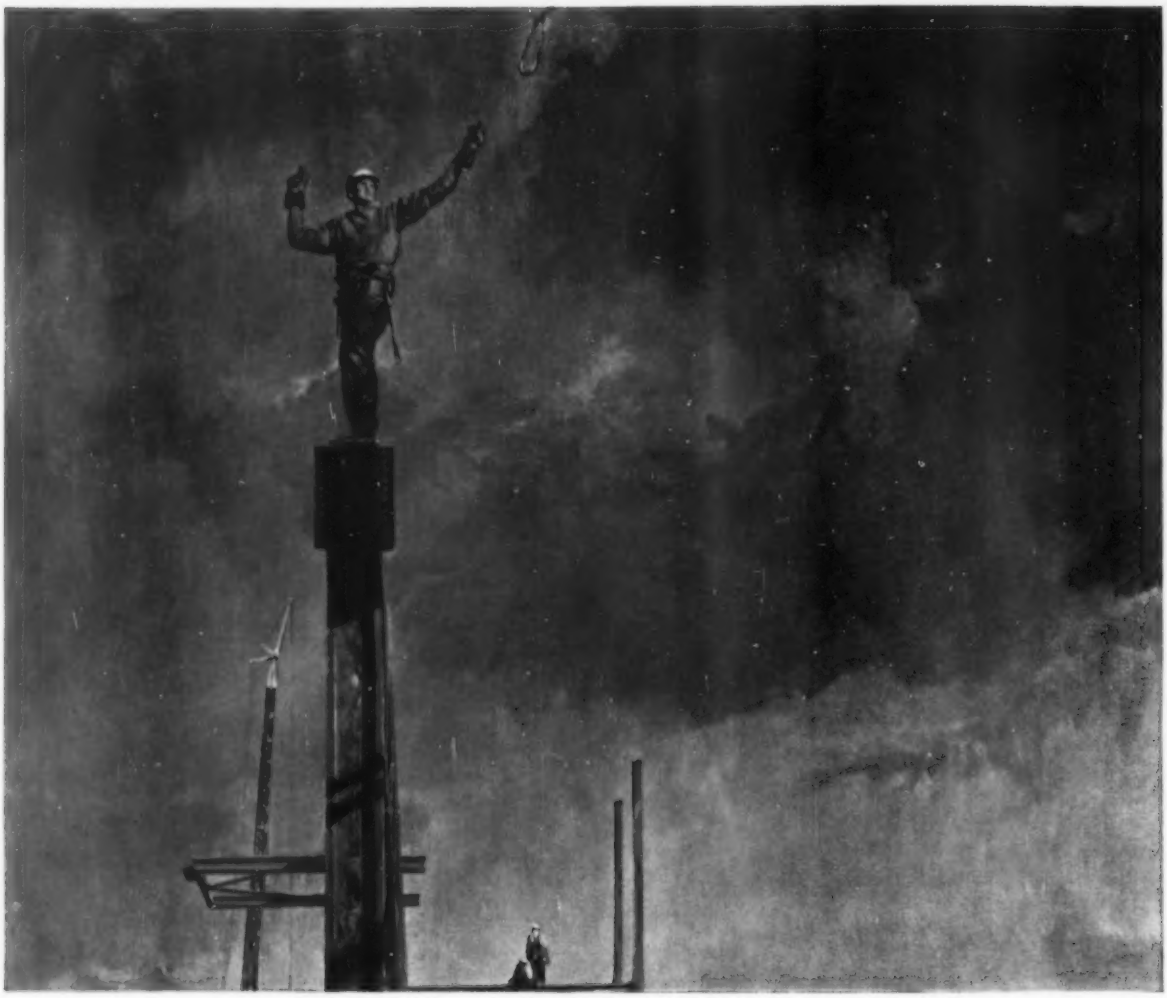

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This increase in savings adds to the pressure to cut rates. "It's just bad business," says a New York S&L official, "to keep our dividend payment high when we can't make good investments."

• **Profit Margin**—S&L officials explain that the spread between mortgage rates and the dividend should be at least 2% if an S&L wants to prosper. Unlike other savings institutions, they are almost solely in mortgages, which are not always the most profitable investments. Mortgage yields have come down from 5¼% to 6% six months ago to about 5% and 5¼% now

"Homebuilding isn't picking up as fast as some persons claim, and our chief problem is obtaining mortgages," explains an S&L man. And the head of a New England S&L observes that "we'll cut our dividend when the mortgage yield breaks below 5%, and it's almost doing that now."

The pressure is not quite so intense as on the commercial banks and mutuals, but here too is talk of reduced rates. Says John E. Whitmore, vice-president of Houston's National Bank of Commerce: "Downtown banks would like to drop from 3% to 2%, but there's not a man who knows what will happen. My guess is that the rate will drop to 2½% on July 1."

• **Follow the Leader**—If the S&Ls go ahead and make full-scale reductions, many banks and mutual savings banks may be inclined to follow. This is true in Los Angeles, where the Bank of America is reported waiting for the S&Ls to move. Some of the banks want to hold out, hoping that a business upturn will bring about higher money rates again, and meanwhile getting the benefit of a narrowing of the spread between S&L dividends and their own interest payments.

In cities where there is a lot of competition, most institutions are against a rate cut—unless all others go down. And nobody wants to be first to break the pattern.

In Milwaukee, for example, where competition among the savings banks is stiff, banks have shied away from cutting their 3% rate. Much of the same wait-for-the-leader idea prevails in Atlanta. The current dividend for the S&Ls there is 4%. Although most savings men think the rate will go down to 3½%, each association is waiting for the other to make the first move. And in New York, competition among the savings banks is so rugged that there's little likelihood of any break at all.

Houston maintains the same attitude. Most banking officials want a cut in rates, but, explains the vice-president

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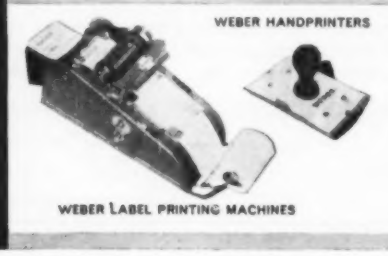


of one of the big banks: "We just haven't made a decision. Our final move will be based on what the competition does." Philadelphia banks and S&Ls also are ready to cut rates, but the competition is so fierce that no move has yet been made.

• **Don't Need to Cut**—In some cities commercial banks and mutual savings banks are hewing to the line that they don't need to cut rates. In New York, the big banks have a small volume of savings in deposits, compared with the proportion in Western states, where savings make up a big chunk of total deposits. Therefore, many New York banks feel they can pay for high payouts by making good investments.

Besides, even if earnings suffer, there's a reluctance to go down. Explains one banker: "We believe the long-run trend is for higher rates, and we're not going to change because of a temporary situation."

One Philadelphia executive explains his bank's tentative decision to forego a rate cut by saying: "We are making money on savings accounts at 2½%. Sure, we could make more if we paid only 2%. But that certainly won't encourage anyone to start saving in our bank."

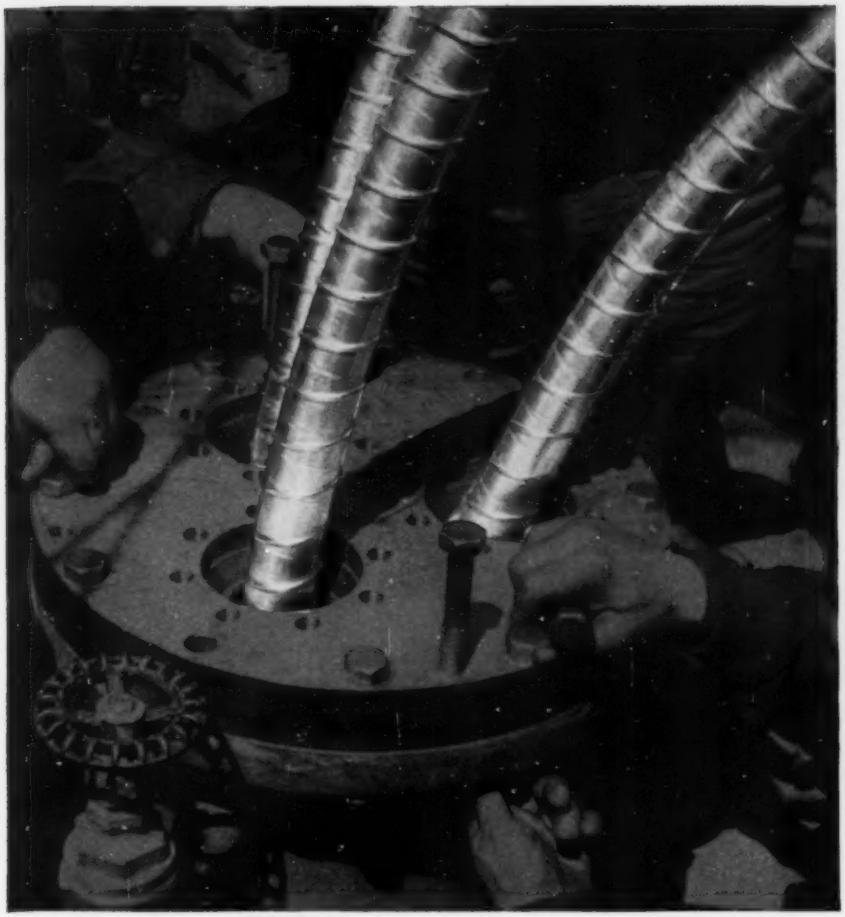
But many savings men think that, once one commercial bank cuts interest rates, others in the same city will do the same. As one banker explains it, "We've got a responsibility to our shareholders and our borrowers as well as to our savers."

• **How Long?**—A great deal depends on how long the easy money period lasts. If it is over soon, the trend toward higher rates will probably be resumed. If it continues, rates paid to savers will definitely move to lower levels.

So far, the S&Ls are hurt the most. Those in areas where mortgages are not available are already cutting—they haven't been able to earn enough to keep pace with the rise in their deposits. The mutual savings banks have done better, buying high-yielding bonds and some stocks, as well as mortgages.

Commercial banks, which were latecomers to the interest rate fight, are likely to be slowest to shift. Although they are being squeezed, they made enough high-return loans in the period of restraint to maintain current rates on savings. And in many places, commercial banks never went to the 3% ceiling as New York banks did, thus have no inclination to move down.

Any reductions that are made will come unostentatiously—in sharp contrast to the fanfare that accompanied the increases. In most cases where a reduction is being considered, the institutions have readied big promotional campaigns to woo new depositors on grounds of convenience and service rather than rates. **END**



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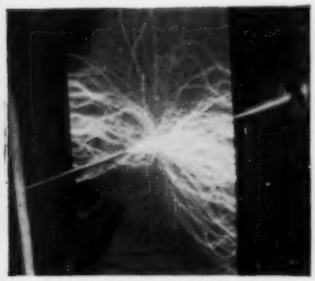

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General Cable reports . . .

New shielding assembly with Du Pont Mylar® limits oil drainage . . . restricts moisture pickup

PROBLEM: To provide an outer shielding assembly on General Cable's high-voltage, high-pressure pipe-type cable. The assembly had to resist oil drainage during shipment and storage as well as restrict surface-moisture pickup during installation.

SOLUTION: After extensive tests on various materials, General Cable Corporation adopted two new tapes for the outer shielding assembly . . . one tape was "Mylar"* polyester film; and the other, a "Mylar"/foil lamination.

RESULTS: General Cable tests showed that "Mylar" provided a tight, yet flexible, assembly and effectively reduced oil drainage. The high tensile strength and other excellent physical properties of "Mylar" permit its application to the cable under high tension. "Mylar" restricts surface-moisture pickup when the cable is exposed to air during installation. "Mylar" is not affected by the insulating oils . . . has no plasticizer . . . will not contaminate other materials.

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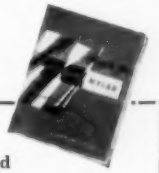

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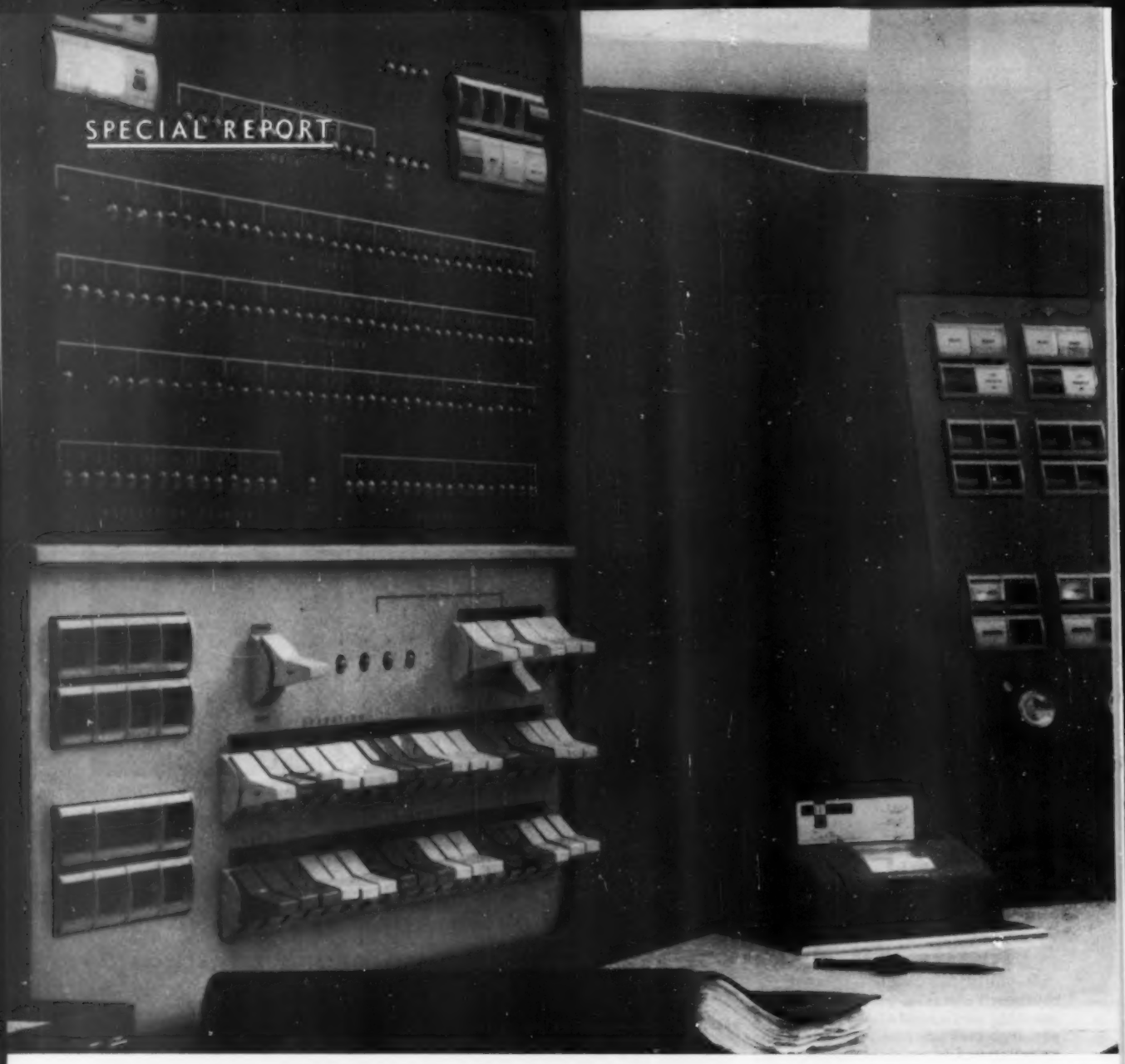
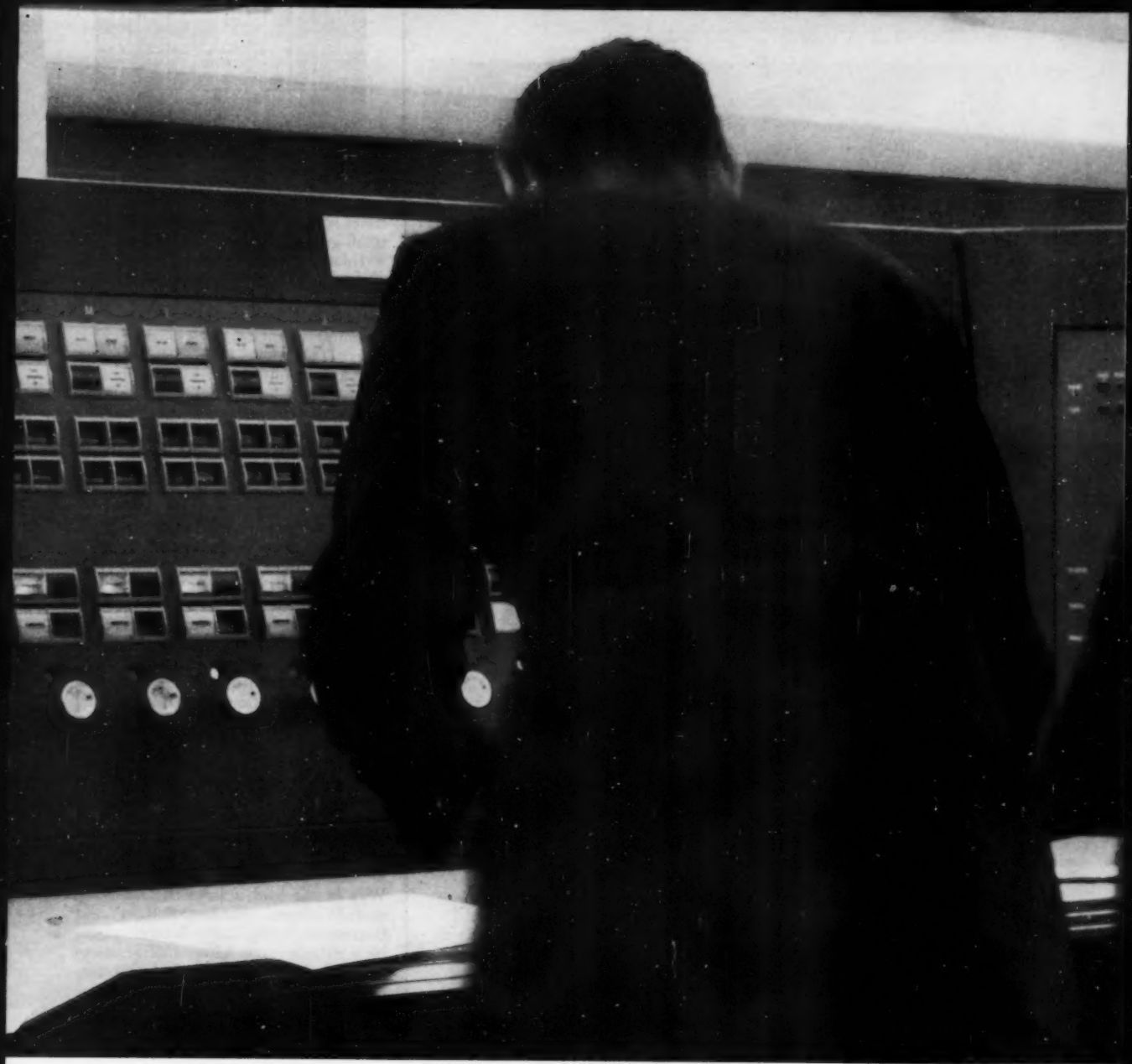


SPECIAL REPORT

BUSINESS WEEK REPORTS TO READERS ON:

COMPUTERS



Computers are no strangers in business today—but the new industrial revolution they herald has hardly begun. Their real potential has been snagged in false starts and mistakes in use—but they're on their way.

Here's what business has learned about what computers can really do—and how they will shake up corporate organization when they get going.

"WHEN THE HISTORY of our age is written, I think it will record three profoundly important technological developments:

Nuclear energy, which tremendously increases the amount of energy available to do the world's work;

Automation, which greatly increases man's ability to use tools;

And computers, which multiply man's ability to do mental work.

Some of our engineers believe that of these three, the computer will bring the greatest benefit to man."

Ralph J. Cordiner, chairman.
General Electric Co.

Just four years ago, at Louisville, Ky., a new industrial revolution started. It began with fanfare and great expectations—with the installation of the first large-scale electronic computer planned exclusively for business use.

Since then, it has become perhaps a most perplexing and disgruntled—but inevitable—revolution.

It's perplexing because industry, which has adopted the marvelously complex electronic computers with an almost religious fervor, often seems unsure of what to do with them after it has them. It's disgruntled, because early results have fallen far short of the rosy dreams in which they came wrapped.

Yet it's inevitable because the computers still hold the key to new systems of organization for the sprawling giants of industry, commerce, and government—structures whose explosive growth over the past three generations has some-

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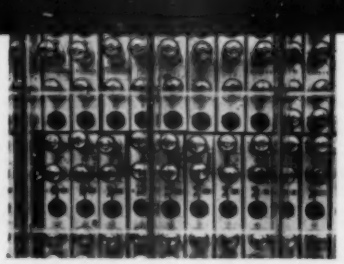


times seemed to defy orderly control by small groups of men at their tops.

• **Infant Prodigy**—This revolution is still a very young one. Even technically, electronic computers are not much more than a decade old. Their first non-technical use dates back a short four years. The whole field is still so new that a "computer expert" is defined as "a man who hasn't had his computer delivered yet."

But after four years, some patterns are beginning to emerge.

• In early 1954, it was estimated that perhaps 50 companies in the country "could eventually use electronic brains." Instead, by mid-1958, over 1,200 companies, plus units of government and the armed forces, have installed over 1,700 of them.

• Out of a welter of exaggerated claims in the earlier years, there has been growing a more recent chorus of complaint. Costs were higher than had been estimated. Results fell far short of expectations. In a recent survey, a solid 40% of computer users talked of "disappointment."

• Yet no computers have been returned. At least 3,000 more are on order, at prices from $300,000 to $2-million each. Dozens of companies are putting in a second or third. More makers are coming in—though profits so far have been slim or non-existent. Way in the lead is International Business Machines. Remington-Rand and Burroughs both claim second place. New entrants now: Minneapolis-Honeywell, National Cash Register, Philco, Radio Corp. of America, and perhaps a dozen others.

• And in some companies, the computer has become a focal point of a power struggle. On one side are ranged those who have grown within—and sometimes created—present systems, and regard the new computer simply as "another office tool" to be used to speed up routines within existing frameworks. On the other are the militant new "computer men" who see their charges as the touchstones of a new organizational theory, and want to reshape structures around them.

• **Industry's Need**—In this struggle, the odds are on the new men. In many cases, the implications are just being recognized—unwillingly, by some.

For industry has been in search of a revolution. Industrial complexes that are modeled essentially on centuries-old military lines find themselves bogged down in interminable communication problems. Paper work has proliferated,

clerical forces have passed production forces in number. As much as half the cost of administering a major company can be charged against the processing of "information." Just the hope that the computer might control the rampant paper jungle awakes tremendous enthusiasm.

Four years ago no one knew what computers could do. The emphasis was on hardware. Sellers and buyers both talked learnedly about pulse rates, diodes, memory capacity, number of computations per second. Translations from man-hours to machine time were made glibly—the machine could do in two hours what 400 clerks now do in a day. Early applications were often simply translations of existing routines—and often failed to pay their way.

• **New—and Different**—By now, the easy talk about "clerical replacement" has faded. In its place is a growing awareness that electronic computers are something different.

An artillery shell is, if you want to be basic, just a faster, more powerful, longer range musket ball. A nuclear ballistic missile is just a faster, more powerful artillery shell. Yet each of these has changed not only military strategies and tactics but the political and economic framework of nations.

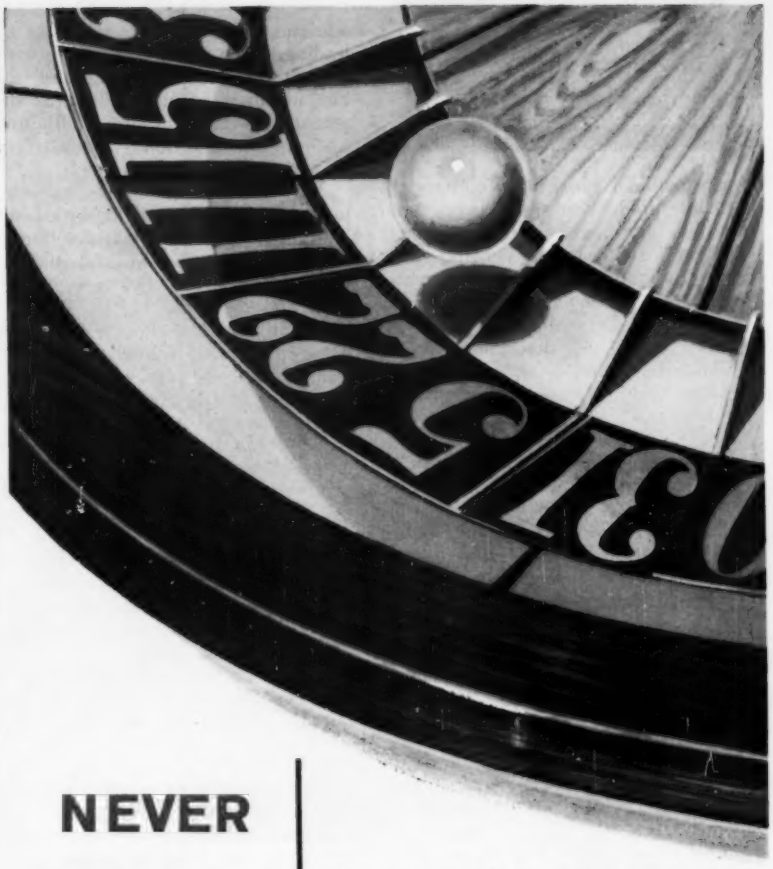
A computer is basically just a faster, more powerful adding machine—and bears to it approximately the same relationship as a nuclear missile to the machine gun. As such it, too, requires reorganization of strategies, tactics, and forms—of the companies employing it.

The electronic boxes already handle a host of tasks. They are making up payrolls, designing products, controlling production schedules, sending out bills, manipulating refinery runs, routing freight cars, developing a Concordance for the Bible, forecasting sales, finding names for drugs still undeveloped.

With some of this, computers are paying for themselves already—where they're being handled intelligently. Knowledge is still thin. Probably not more than 100 have had two full years of use. Industry is still in the experimental stage—and as in any experimental era, the fumbles and failures outnumber the successes. Industry is learning, the hard way, that simply purchasing an electronic marvel does not automatically solve a company's problems.

• **New Shape of Things**—Yet the vision of electronic management—in the vast potential areas of processing data, administrative and manufacturing control, decision making—is actually growing. Now computer men talk not in terms of single "self-amortizing applications" but of "total systems."

In this picture, an electronic center would be the very heart of any business. As new orders feed in, the center could automatically determine, order, and al-



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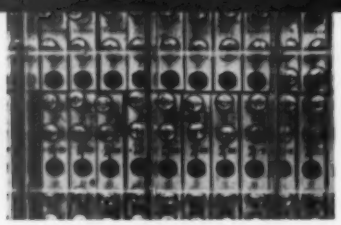


locate material and labor requirements, schedule production and delivery, send out bills and make payments, project changes in market demand and strengths, and supply compact, accurate, and immediate reports to top management—all in one continuous flow.

Men would still determine policy—but machines would implement it.

How soon? Theoretically, it could be done now. In more practical terms, not for a decade. But most certainly, within a generation. It's as difficult to guess today where the computer world is going as it would have been for 18th Century man to foresee the industrial civilization that has grown out of James Watt's little steam-driven pump.

• **Human Barriers**—Yet this vision, today, is talked of guardedly. Along with the realization that it can be done has come a counter-realization: To do it means the radical reorganization of the corporation as it now exists. It requires the breakdown of departmental walls that may have been a half-century in the making. It could sweep out whole ranks of supervisors and middle management.

This specter alone has slowed down—and may continue to slow down—a faster exploitation of computer potential. And it is the major root of the growing discontent with electronic results so far. A man whose livelihood depends on the function of his job will fight indefinitely to preserve that function. Multiply this by thousands, and it's easy to have "disappointment" arise.

Triple Business Role

But as men can slow down the computer revolution, only men can speed it up. Computers are not—yet—"thinking machines," although they do have a surprising array of powers. They can "read," "write," do elementary arithmetic, compare, make yes or no choices, and transfer information from one place to another—and do it all far more accurately than human counterparts.

But they can do these things only with all the proper equipment, the proper information, and highly specific instructions. They cannot theorize, use independent judgment, arrive at intuitive conclusions—or carry a process one single step beyond their prescribed instructions. If men put in the wrong information, or the wrong assumptions, the wrong answer comes out. The computer cannot correct its master.

What they can do, they do fast. They have been called "idiots that can add one and one,"—which is true, but misleading. Each single computation is essentially the adding of one and one—but in microseconds, millionths of a second. Within minutes, millions of one-plus-one additions come to complex answers.

This speed itself creates something new. Problems that might, with pencils and slide rules, have taken a hundred men a hundred years—and therefore were never tackled—can now be done in months or weeks.

• **What Answers?**—For technical purposes, high-speed computation itself is the key either to get a large number of answers from a limited amount of data, or a few answers from a vast amount of data. Some highly oversimplified examples:

• If you wanted to know all possible five-letter words with vowels as their second and fourth letters, the only "information" needed, in addition to the necessary processing instructions, would be the 26 letters of the alphabet, to give you, within minutes, the thousands of possible combinations.

• At the other extreme, take the earth satellite that is constantly beeping out information on conditions in space as it meets them second by second. A computer absorbs this tremendous amount of data, collates it, reduces it to a meaningful pattern.

Within the technical area, computers are being used for a multitude of jobs ranging from designing missile components to charting the orbits of the moons of Saturn. Technical users are almost invariably satisfied with the acceleration of their research—although results are finally provable only in terms of product or method that may ultimately come out.

• **From Figures to Policy**—But in this report, BUSINESS WEEK concentrates on the "business" applications, which fall roughly into three areas: clerical work, decision making, and policy determination. So far, the emphasis has gone to the first, since management has traditionally analyzed its communications in terms of countable clerks and pieces of paper handled.

For a clerical aspect, take a payroll application. Names, wage rates, hours worked, production, special conditions can be fed in for each of 10,000 separate individuals at one end, checks with explanatory material fed out at the other. The routines are already well established. None of the individual "problems" as such challenges the "computing" ability of the machines, but the computer still can do the overall job faster than former methods.

• **Computing a Decision**—Decision making starts where clerical work leaves off. Far from meaning only broad policy, "decisions" start way down the line. And here's where computers start tumbling the department walls down.

Take an inventory problem under some traditional methods.

There's a recent increase in use of a certain part—say, a check valve. A storeman one day realizes the supply is getting a little low. He notifies a supervisor, who then has to check advance schedules, to decide how soon he's likely to run out. He, or his boss, plus probably someone from the financial side, must then decide whether to order just enough to ensure the current run, enough for a six months' supply at current levels, or—guessing that the particular demand may slack off—bring in only three months' supply. This decision then has to be transmitted to the purchasing department, which must pick the right forms and methods to order valves, and send them out. All this may take as long as a week, is subject to error all the way through.

Compare this with a computerized setup as one company has installed it.

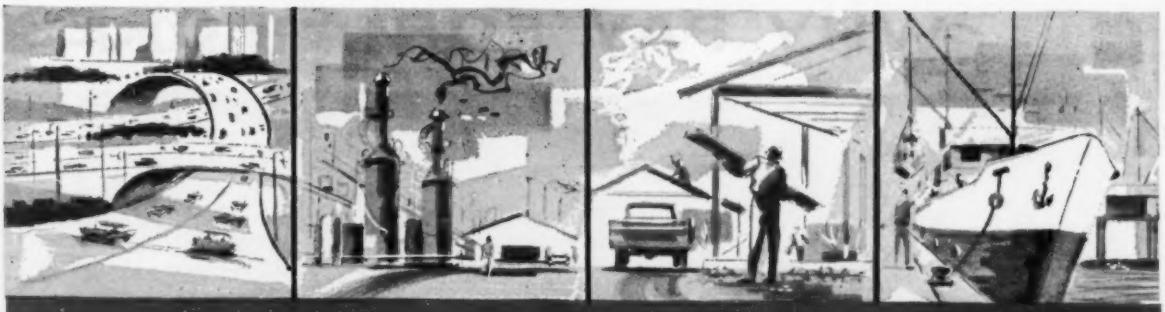
Into a computer system are fed the estimated shipments for a year, an inventory of the 40,000 parts used, with their vendors, and the minimum amount required on hand under varying conditions, allowing for production lead time. The information is regularly updated by feeding in the amount of material consumed, and changes in order rates. This provides an accurate perpetual inventory of what's on hand and what's needed.

When any one of the 40,000 items reaches its predetermined minimum, the computer automatically prints out an order for the ideal amount . . . and if delivery doesn't come before the cushion is used up, the computer will pop out an expedite order. By maintaining optimum levels, it cuts the former costs of maintaining inventory by a solid 20%.

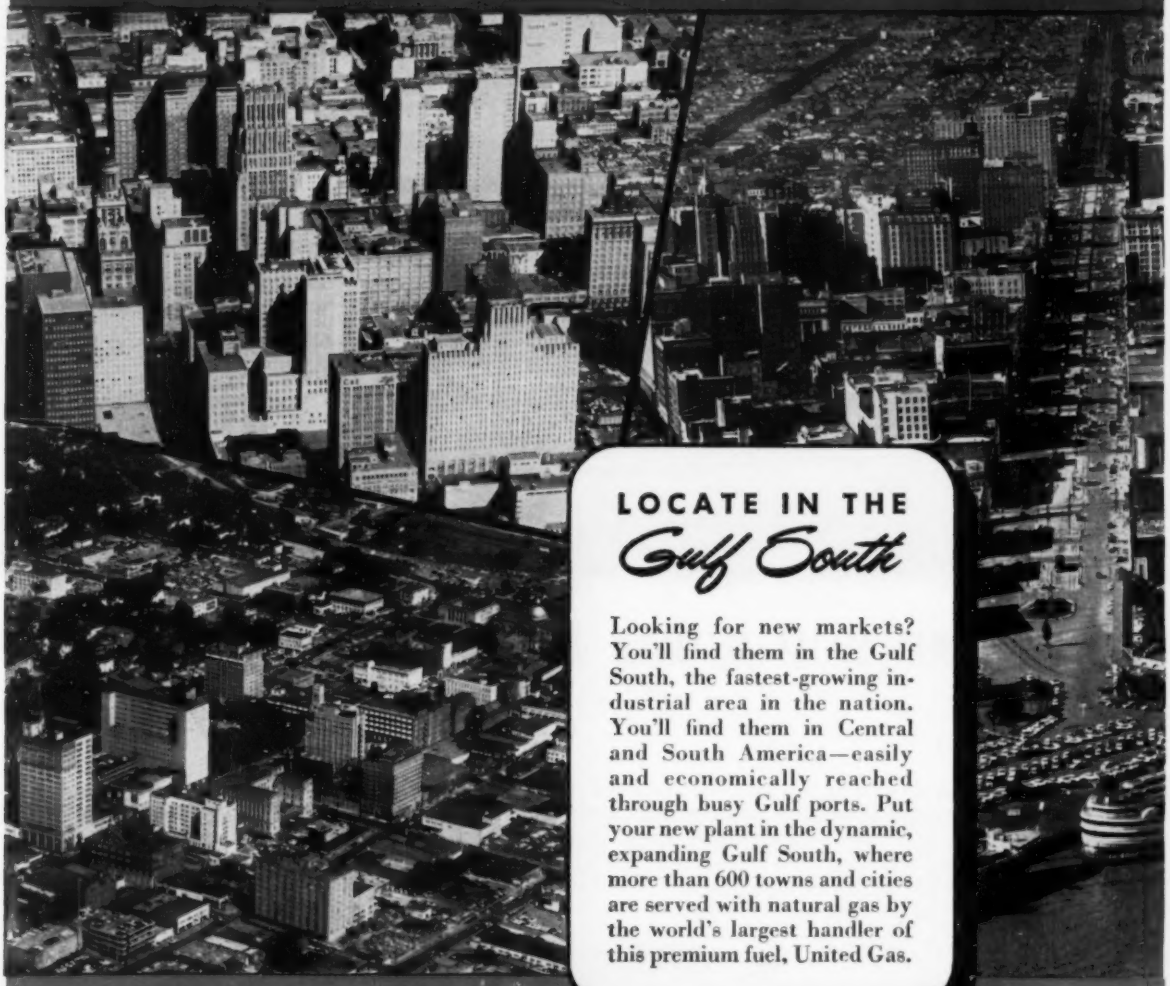
• **Cross-Currents**—This system not only eliminates the initial problem—running low on an item—it also obviates job functions in as many as three or four departments keyed separately to deciding how much to order of what, and when. It takes the process one step further, too—in effect, it also sets production schedules for the company by "ordering" at the proper times the parts made by the company itself.

• **Policy Aids**—The question of policy determination is more uncertain. The ability of the machines to deliver more information faster to help management chart its moves is unquestioned. The one thing the computer is doing so far in this area is forcing managements to a reappraisal of what information they really need.

With all these possibilities, why the confusion and complaint? It's partly because, in many cases, possession of a computer became a matter of "bandwagon" prestige. It's partly because



MARKETS to spur industrial growth



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Not Just a Faster Clerk

Probably in no area of management has there been so much self-deception as in the early computer surge.

First a company decided it wanted a computer—then it looked for a reason. Staff men—or brass—anxious to get their hands on the new glamor tool often inadvertently underestimated costs. And the figures they did arrive at, they most often justified in terms of "savings by reduction of clerical personnel."

• **Cost Fallacies**—Popular reports on big machines frequently put operating costs in the area of $300,000 a year, based on a rental of $25,000 a month. But that's only a starter. No two electronic data-processing systems are identical. And a system is more than the central computer. Peripheral equipment needed to get information in and out can cost as much again as the central computer.

Actually, expenses for a minimal large-scale system will run at least $675,000 a year on a one-shift basis. Far more hover around $900,000. Medium-scale systems will run between a quarter and a third of those figures. (A breakdown of computer costs appears on page 77.)

• **False Hope**—At the same time, equation of machine time with a clerical effort has often proved a snare and a delusion. Rarely have enough clerks been displaced to cover even the low estimates—much less the real costs.

One large company transferred to a computer a labor accounting operation that had employed some 400 persons. It found, however, that the machine, at best, can do only about 25% of the things a clerk must do. People on this operation actually did some 65 different tasks, ranging from answering phones to calculations, and 75% of their total job was in "human" activity. So even after the machine was "handling the job," some 300 persons were still needed.

In other cases, employee reduction may be a complete chimera. One company consolidated work being done by one or two clerks in each of about 50 small departments, sales and branch offices. But the clerks still had to be retained to handle other activities, so personnel saving was zero.

• **Real, Too**—A more probable—though less provable—saving in this area is not in reducing the work force, but in making its expansion unnecessary.

Once a system is effectively established, a greater amount of data increases the amount of machine time only slightly, with other costs fairly constant. An insurance company concedes its system eliminated almost no

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What It Costs To Run a Computer

No two computer systems are identical—but here's how a "typical" large-scale installation might break down in annual costs. Since over 90% of all computers are rented, figures are on that basis.

Running costs

System rental, including peripheral equipment	$480,000
Direct computer staff (13 to 17 full-time)	100,000
Supplementary clerical force (24 to 48 clerks whose work revolves full-time around the installation, in card or tape punching, data collection, and so on)	120,000
Power, punch cards, tapes, spare parts	15,000
Total running cost per year	$715,000

Start-up costs

Installation (including special floorings, wiring, moisture control, air conditioning). The range runs from $85,000 to $225,000. Average	150,000
Initial programing (preparing the problem for the machine, and converting data into machine language)	350,000
Feasibility studies. For salaries and expenses for top-caliber men over a period of time, the range runs anywhere from $100,000 to $250,000. Average	150,000
Training and parallel systems cost (normally computer and old systems are run side by side for two to six months as a check)	150,000
Average start-up cost	$800,000

Total costs per year

Assuming a five-year amortization of start-up costs, average total cost per year for the first five years is	$875,000

(This does not necessarily include costs of analyzing existing methods, or of "purifying" files. One large insurance company, for instance, had kept policy records in separate numerical, alphabetical, and premium-due-date sequence files on individual cards. Since files could be cross-checked, slight errors on any one were unimportant. But consolidating all files into a single master for a computer required elimination of all errors. The "purifying" bill came to $12-million.)

Medium-scale systems would run between a third and a quarter of these totals, averaging out at around $250,000. So-called "small" or "baby" computers, with rather limited application, can run below $100,000.

A large system, costing three times the "medium" price, may well do 10 times as much work. But if a large unit is not used to capacity, an operation may be a net loss, where it could have been profitable on smaller or slower equipment. Too many companies have fallen victim to the idea that "if a small computer is good, a big one must be better."

A company that can't use any system full-time doesn't have to forego electronic experimentation. One-shot problems—and even some recurring jobs—can be handled at manufacturers' or commercial "service centers." Another possible solution: cooperatives, such as SPAN Electronic Processing Center in Hartford, set up by four insurance stock companies as a joint operation—though not all types of companies could arrive at the necessary integration of methods and forms.

one originally, argues that in two years of operation it has absorbed increased volume that, otherwise, would have required some 200 more clerks.

• **Uneconomic**—More than half the time, payroll has been the first administrative application thrown on a computer—already the most disciplined of corporate paper work, its translation to a machine is relatively easy, and the idea of greater speed is intriguing. Yet experienced users, and manufacturers, now say that transferring any already mechanized operation, such as payroll, to electronic processing as a self-contained operation is uneconomic.

The arithmetic is simple. Take a big computer. For it to be "profitable" on routine applications, it must effect a gross saving over other methods of nearly $1-million a year, or about 200 clerks. Taking the ratio of one clerk displaced out of every four formerly employed on the job, that would mean taking over an operation that had required 800 clerks. Even if each new single application uses only one-quarter of the machine time, that still means a job that might require 200 clerks. Even among the largest companies, it's rare to find a single routine application in one location using that many.

Even where a computer displaces mechanical equipment too, cost differential between a computer and even a massive tabulating set-up is so great that the discrepancy can rarely be evened out on a parallel job. And in practice, much of the former mechanical system remains to service the new electronic center.

• **Where It Proves Out**—But there are, of course, some areas where a computer can be successful purely as a "faster office machine":

• Where the product itself is paper work, and "production" is the constant manipulation of millions of figures, as with insurance companies.

• Where large numbers of arithmetical changes must be made on a recurring basis—say, for a utility company, where the figures on every account must be changed every month.

• Where the volume of clerical data that must be handled grows faster than the availability of personnel, or the capability of other methods to handle it.

As a result, insurance companies and utilities have been the most enthusiastic buyers of the new electronic systems, now have over a quarter of the medium and large systems installed.

• **Unused Potential**—But for the general run of companies, mere mechanization of existing routine often fails to utilize the real potential of a computer.

The history of the first big installation—General Electric's at Louisville—holds some lessons.

• **What GE Learned**—The original

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Difficulties of "getting through" present few problems with B&O Time-Saver Service. You can count on unusually dependable delivery day in and day out. And B&O "babies" your LCL with *utmost* care . . . on fast, convenient schedules. That's why you're smart to ship via B&O Time-Saver.

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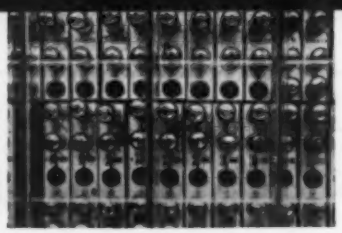

blooper, says a company official, "was our public estimate—based on theoretical machine speed—that we would run the payroll in two hours a week. We forgot the stuff had to be put in and taken out—there was a limit to how big a bite the machine could take and digest.

"Management was asking for blue-sky tricks. Programers wouldn't admit there might be limits. Trick treatments were programed in. Every possible exception was included. They'd start running, the machine would find something incompatible, and scream to a halt. Actual running time for the payroll at first took, not two, but 36 hours.

"And a solid quarter of that was in pointless work. Paychecks were sorted in the machine exactly as they were handmade—in alphabetical order by department. We found later that the sorting job could be done equally well by three clerks in half a day—at about 1% of the machine time cost. Even today, though a lot of additional material is tied in, payroll still takes 16 hours."

A lot has been learned about the machines in the interval. But other outfits are still making the same mistakes.

• **"Most Computerized"**—GE itself has pretty well learned the lesson—it has become since then the most computerized company in the world: 11 large-scale and 32 mediums already operating, and three big ones and 38 mediums on order. At one of its installations, this is what happens to a "payroll" operation now.

The basic data not only provides weekly paychecks, but also supplies complete accounting on labor distribution, and precise labor cost on each item. As a side dividend, it kicks out records for social security reporting. With supplemental information on material and overhead, it develops a complete bookkeeping system on job costs, automatic project billing, and a "responsibility reporting system" which provides to each of a half-dozen executive levels a summary report of the immediate subordinate level.

Where It's Heading

To do this, though, meant a radical change in earlier methods, where each segment of this total accounting system belonged to a separate segment of the organization. It also meant acceptance of the computer as a "system tool," and not simply a fast office machine.

In contrast, take another company which boasts of the number of applications it has a big machine—"the brass likes to see it fully utilized," says a staffer. Yet its computer men will privately concede that many applications are marginally justified at best. The hitch: The data processing center has been conceived simply as a "service for existing departments."

A department may come to the computer group for a specific program—the computer group cannot suggest a reorganization of the department. For any proposed development covering two or three departments, each department head has an independent veto.

• **Handful**—In any company, a hundred segments feed into and flow out of each other—though over the years each has developed, organizationally, into a private empire. To treat their problems separately on a computer—as is frequently done—is wasteful, even though it's justified as "taking one step at a time." Yet in many cases, attempts at an over-all functional approach have run head-on into the solid walls of these private empires. As yet, only a bare handful of companies are attempting a "total system" attack.

Costs vs. Results

Before computer use advances much further, whether as total system or as faster office machine, current and potential owners will have to take long, hard looks at two questions:

• In terms of hard dollars, is what we're doing with a computer worth what it actually costs?

• Could we do the same job some other way—say by reorganizing an existing, but archaic, system?

• **Byproducts**—Paradoxically, savings credited to computers are frequently only indirectly connected to the actual capacity of the hardware.

Even an already mechanized system must be revamped for computer application—and formerly sacrosanct methods disappear. Manufacturers concede that if companies made the same intensive analysis on their systems—and the necessary changes—without the spur of an incoming computer, they might sometimes eliminate the need for one.

• **Savings That Vanished**—This month, the board of directors of a New York company will decide whether to install a medium-sized computer. A feasibility study concluded that the machine would rack up net savings of $275,000 a year . . . $600,000 gross savings, less incremental costs of $325,000 for the computer operation.

Before deciding the board has had the figures rechecked by an outside organization which found that, of the $600,000 gross annual saving:

• $141,000 could be saved by re-

1.

By dint of toil and midnight oil, Norm Robbins' thriving firm
Made money by the bucketful, made competition squirm.
Norm wanted to reward the men who'd helped in his success:
"I'll bolster their Group benefits to thwart financial stress."

2.

The man from Travelers rhapsodized, "To make them ironclad:
Group Maior Medical with Travelers—just the thing to add.
Why, fretting over doctor bills can make a man a wreck—
The most prodigious worker soon becomes a bottleneck."

3.

Norm bought. And then an illness hit the foreman's baby daughter.
Through all her ills, he paid the bills, his head above the water.
The grateful fellow clasped Norm's hand, "You made a happy buy;
My girl is on her feet—and thanks to Travelers, so am I."

4.

With all due modesty Norm said, "I would've been benighted
If I'd not called The Travelers in—instead I was foresighted.
Group Major Medical with Travelers—wouldn't be without it!"
And you, sir? Ask a Travelers man to tell you all about it.

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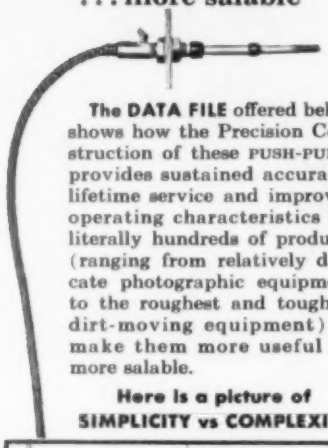
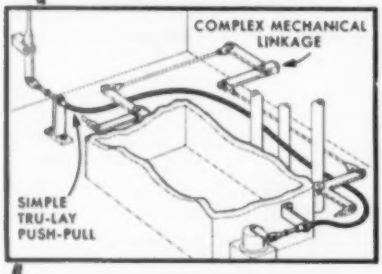


The DATA FILE offered below shows how the Precision Construction of these PUSH-PULLS provides sustained accuracy, lifetime service and improved operating characteristics for literally hundreds of products (ranging from relatively delicate photographic equipment to the roughest and toughest dirt-moving equipment) to make them more useful ... more salable.

Here is a picture of SIMPLICITY vs COMPLEXITY



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Mechanical Linkages, as shown dotted in the drawing, are Complex, have Many Parts, Many Points of Wear to create Increasing Back-Lash with Loss of Accuracy and Multiple Vibration Rattles.

The six bulletins and booklets in the DATA FILE

provide a clear picture of how the Flexibility of Tru-Lay Push-Pull Remote Controls simplifies Design and Assembly ... cuts costs for Engineering and Production.

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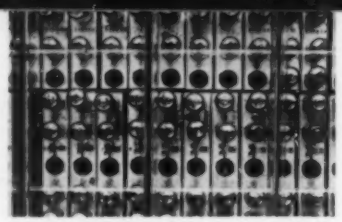

organization and simplification in existing manual methods.

• $169,000 could be saved by the improvement and streamlining of the existing punch card system.

• The gross saving attributable solely to a computer would be $290,000.

But the operating costs of the computer, plus start-up costs amortized on a five-year basis (not including the $200,000 cost of the feasibility study) would come to $325,000.

That would mean an actual net deficit of $35,000 annually.

Will the company buy the machine anyway? Probably. For one thing, an official suggests, without the leverage of the computers, existing methods might not be changed. For another, the company figures the $35,000 annual deficit is a small "learning" price for further uses they'll find later.

. . . **And Those Not Expected**—These "later uses" sometimes show up in unexpected ways.

A Midwestern manufacturing company bought a machine for accounting. Its computer people played with a production bottleneck that had previously seemed insoluble. The answers they found brought bigger savings than the accounting application.

A utility started with a customer billing operation, found this could be easily translated into analysis of load factors and geographic equipment use. By shuffling its equipment, it has met growing market demand without additional generating capacity.

• **How Speed Can Pay**—Speed alone sometimes provides the unexpected dividends.

A major defense supplier started a big machine for manufacturing control, payroll, and cost systems. As a by-product, it was able to get payment from the government one week sooner. The week's difference cut down capital needs by $18-million. Interest savings alone—between $700,000 and $800,000—paid off the full start-up costs.

Nor are such inadvertent dividends exceptions. But a number of companies have been willing to buy pure speed, even without a tangible dollar yardstick—particularly in the area of production controls.

It used to take seven weeks, says a big manufacturer of electrical equipment, to get all the paper-work vouchers, scheduling charts—on the floor to make a $700,000 piece of equipment. The computer does it in seven days—giving a competitive edge because the manufacturing cycle is so sharply reduced.

"How do you measure the value of knowing two weeks sooner what production mix you should have on the assembly line?" asks an auto man.

• **Costly Illusion**—But "buying speed" can be illusory—and expensive. One consumer product company uses a medium-scale machine for analysis of weekly sales by product, salesman, and area. The company is happy about its up-to-the-minute figures. But a computer manufacturer notes that this is essentially a sorting operation, rather than a computing one, that it could be done at a third of the cost, and just as fast, on tabulating equipment.

Measuring Without Yardsticks

The greatest potential of all may lie in electronic delivery of "management information"—but up to now, actual accomplishment along this line may also be most illusory of all.

Computers are good at the old Army game of "Hurry up and wait." Any report can be speeded up tremendously . . . and expensively. Machine analysis of markets and sales, long-range planning, operations research, and generally "faster reports," all are being played with—and the word "play" is used advisedly.

For—though in any business current projects must justify themselves economically regardless of what the future may show—this is an area where no dollar yardsticks are available. So it's an area where toughness of mind is particularly called for in analyzing what's really needed from the computers. Is the information they provide worth the cost—and are they really indispensable in providing it? Is the information even necessary? Possibly most important—will it be used quickly enough? The criterion must be not how fast the machine can deliver it, but how fast action will be taken on it.

• **Answers**—To date, you'll find all kinds of answers, mostly based on "feel."

One outfit, whose $900,000-a-year installation runs at a $500,000 net loss on routine data processing applications, shows a "profit" by arbitrarily assigning a value of $750,000 to operations research experiments.

A large retailer uses a system for continuous analysis of sales. Buyers get an almost hour-by-hour picture of how items are moving, can re-order faster on hot ones. No direct "saving" is involved here. It's actually an additional cost. But the company is sure it has paid off in ability to exploit seasonal markets faster, and eliminate loss of sales because of empty shelves.

Several companies use computers to speed up quarterly reports. But this

this much Stabilizer...

It takes just about a tablespoonful of one of Victor's versatile stabilizers in vinyl formulations to keep everything shipshape for these back-yard bosuns . . . keep their "Seven Seas" a colorful center of attraction, beach ball and bumbershoot brimming with bright hues, too.

Plastic manufacturers know why. Victor stabilizers not only guard vinyl films against color fade-out on exposure to Sun-tannin' Sol, but also help secure better pigment dispersion and smooth film surfaces.

Perhaps you can enjoy smoother sailing with some of *your* products, too, if you let us get in the swim and help. How? With samples of the Victor Chemicals you'd like to play with—right in your own back yard. Tell us—on your company letterhead—what you want and we'll sail it your way before you can say "It *pays* to see Victor." Victor Chemical Works, Box 603, Chicago 90.

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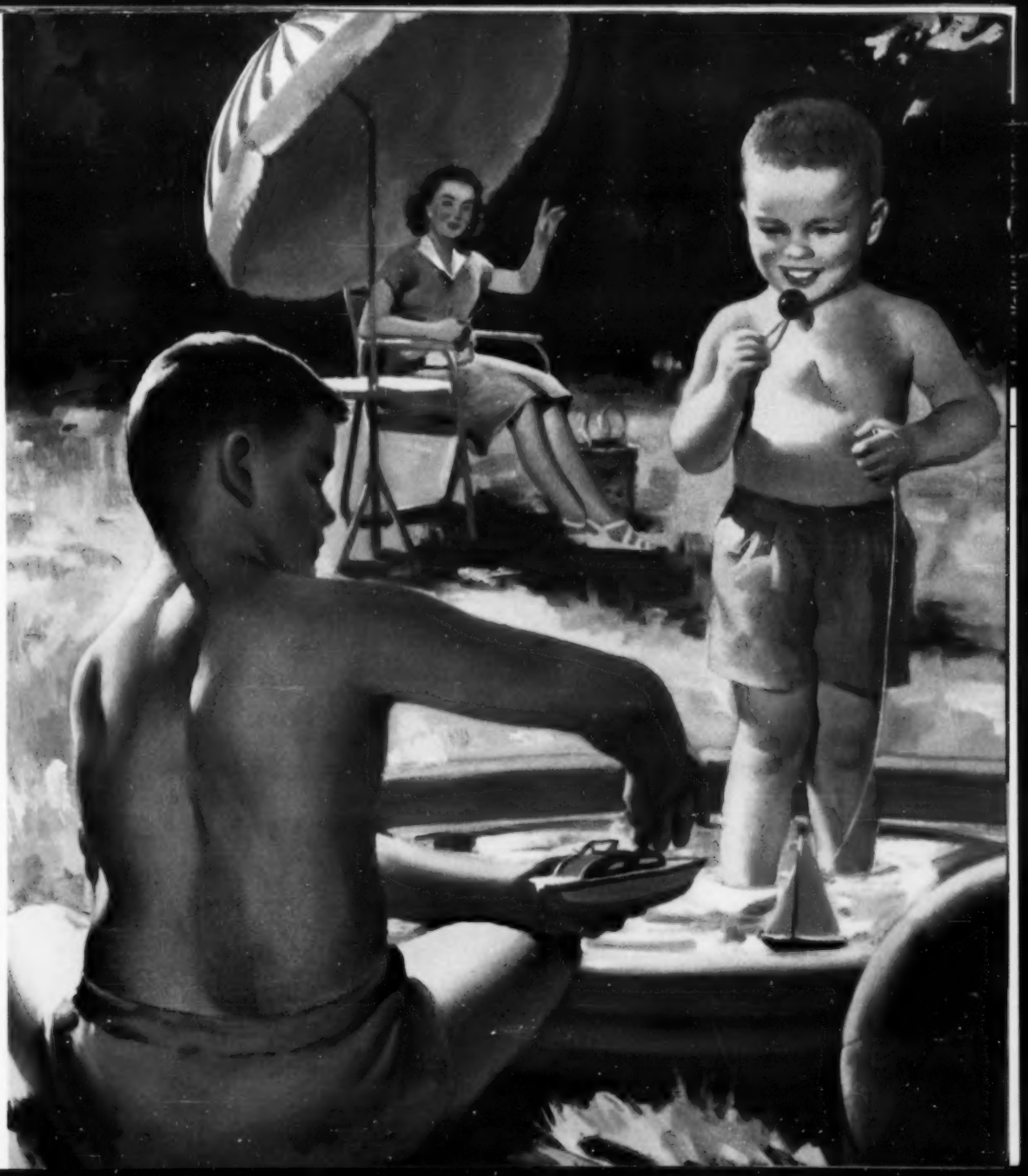
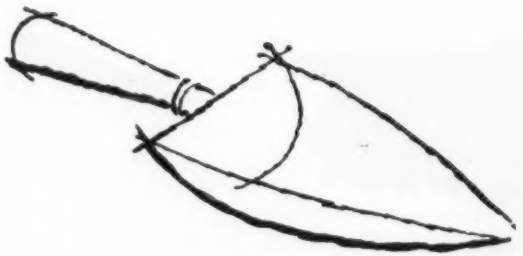


this much Oxalic...

Add heavy duty Victor *oxalic acid* to automobile radiator cleaning compounds and rust and iron scale cease to take their toll as trucks and cars roll along the road.

Most leading producers of radiator cleaners use Victor oxalic as an ingredient. They know this versatile Victor chemical helps keep cooling systems *running* cool . . . that it dissolves and washes out rust *without* injury to metal and rubber parts.

How are the sales of your products rolling along? Perhaps a Victor phosphate, formate, or oxalate can help speed them through production . . . make them real cool performers in today's market. To find out how Victor chemicals can help, give us the high sign . . . tell us what you want and a sample will be on the way before you can say, "It *pays* to see Victor." Write on your company letterhead to: Victor Chemical Works, Box 603, Chicago 90.



this much Tetrasodium...

Many leading brands of powdered soap contain 10%-15% Victor *tetrasodium pyrophosphate*. That's one reason why it's almost child's play on wash day to turn out all types of clothes clean as a hound's tooth.

Due to its synergistic action, Victor TSPP enhances the cleansing action of soap . . . literally softens hard water and also helps prevent iron stains. In addition, it's gentle on busy hands.

And here's a gentle hint if you're wondering what Victor phosphates, formates, and oxalates can do to clean up some of *your* problems: just send for a sample of the chemical you want to investigate. We'll have it on the way to you before you can say, "It *pays* to see Victor." Write on your company letterhead to: Victor Chemical Works, Box 603, Chicago 90.

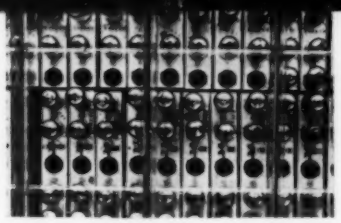
VICTOR
Dependable Name in
Chemicals
for 60 Years

this much Tetrapotassium

A small amount of Victor *tetrapotassium pyrophosphate* as an intermediate in cold rubber formulations provides husky skin divers with all the protection they need to explore Davey Jones' locker for long periods of time.

Like most of the world, the underwater explorer "rides" on rubber, too. Flipper fins, hood mask, suit, even the propellant for spear guns—all are rubber.

Why not let us dive into some of *your* problems? You may find, as so many already have in more than 40 industries, that Victor chemicals can help fathom some of your deep-seated production difficulties. Send for a sample of the chemical you're interested in, and we'll shoot it off to you before you can say, "It *pays* to see Victor." Write on your company letterhead to: Victor Chemical Works, Box 603, Chicago 90.



is something different from the restocking of a fast-moving retail item. Weaknesses that may show in consolidated financial reports—high inventories, a sharp drop in market demand, rising commodity costs—are rarely susceptible to such immediate action by management that three or four days makes an important difference. It costs one company something like $200,000 a year for these "faster" financial reports. Is it worth it? A company spokesman says he "feels" it is.

A company in defense work has to forecast work loads and budgets where requirements are constantly changing. Formerly, semiannual forecasts took an average of 60 days to complete—and by that time were often obsolete. A computer sets up, in 10 days, one master forecast for a whole year, which can be updated as changes come in. The company claims some dollar savings in handling data—but more important, it feels it can plan and bid on new business more effectively.

• **Subjective**—Judgments of what computers can do in long-range planning and forecasting are equally subjective. At best they can only reflect assumptions put in—only time can prove whether the right assumptions were made, and all factors included. "Operations research" applications, several users as well as outsiders suggest, are rarely massive enough to justify large-scale computers—and once the basic equations are established, can be kept up to date by one or two men with slide rules.

Who's to Run the Show?

Says a computer user: "These machines are like grand pianos—you can become a virtuoso, or you can play Chopsticks all your life." With computers for business use only four years old, there are still a lot more Chopsticks players than virtuosi.

• **Longhairs and Finance Men**—The biggest weakness to date, suggests a computer maker official, is that "the computers have been in the wrong hands. Operations were left to the longhairs—electronics engineers and mathematicians—and at the same time, in too many cases, financial men, already high priests of mystery with traditions to protect, took over control."

The early inclination was to go outside a company to hire technicians, electronics engineers, even mathematicians. The electronics engineers under-

When you ship, title passes, and your credit risk begins

At the time of shipping, you create an account receivable . . . and unless you have credit insurance . . . your insurance protection ceases. You lose control of the asset because title of the merchandise has passed. It is sound to insure your product while you own it . . . it is equally sound to insure it when your customer owns it . . . and owes *you* for it. Aggressive executives, through American Credit Insurance, continue protection of their working capital and profits invested in receivables. It is an important tool for constructive credit management. Our booklet on the many ways credit insurance contributes to financial security and sales progress should interest *you*. Write AMERICAN CREDIT INDEMNITY CO. of New York, Dept. 42, 300 St. Paul Place, Baltimore 2, Maryland.

Protect your capital and profit invested in accounts receivable with **American Credit Insurance**

ANY ACCOUNT . . . NO MATTER HOW GOOD . . . IS BETTER WITH ACI

You can make a sale to an out-of-town customer right now ...by telephone

Orders coming in too slowly these days? Out-of-town sales falling short of your forecasts? *TRY THIS...*

1. Pick an out-of-town customer—maybe one who hasn't bought from you in some time.

2. Decide what you want to sell him. Jot down your sales data and "approach." Try to anticipate his objections and be ready to meet them.

3. Then place your call.

The customer's telephone rings—and suddenly you're in his office. Your chances of making a sale are good—because selling by telephone is so much like selling in person.

Make sure your sales people are making the best possible use of out-of-town telephoning—on a *consistent, planned* basis.

You'll find *it pays.*

Lee Fastener Corporation, a New York zipper firm, telephoned a California golf bag company (cold!)—got a $600 order. Lee now averages two orders from every three out-of-town calls.

BELL TELEPHONE SYSTEM

YOU SAVE MONEY
WHEN YOU CALL STATION-TO-STATION
instead of Person-to-Person

For example:	Day Rates (first 3 minutes) Person-to-Person	Day Rates (first 3 minutes) Station-to-Station	Each Added Minute (applies to all calls)
Buffalo to Cleveland	$1.05	75¢	20¢
St. Paul to Chicago	$1.45	$1.05	30¢
Boston to Norfolk, Va.	$1.70	$1.20	30¢
Milwaukee to Philadelphia	$2.10	$1.50	40¢
San Francisco to Detroit	$3.30	$2.35	60¢

Add 10% Federal Excise Tax

Computer Do's and Don't's

Telling any one company exactly what it should do is almost impossible. But by now, both users and manufacturers have absorbed enough experience to develop some general do's and don't's for companies considering electronic data processing. Here's their advice:

Be prepared to question the contention that your present method is working well. You may be talking to the man who designed that present method.

Be prepared to run into unpredictable delays and costs, into organizational and communication problems.

Be prepared to find that descriptions of present procedures are inadequate and often untrue. Descriptions often represent the original hope, rather than the actualities.

Don't pick your hardware until you're quite sure exactly what you want to be doing with your system at least five years hence. Then pick the model that will do that job. Tailoring new corporate systems to limitations of specific machines can defeat its own purpose.

Don't simply try to superimpose electronics on top of existing programs. All you get is redundant costs. Don't consider a computer as a fancy clerical or tabulating department. If you can't get a different result, qualitatively as well as quantitatively, you probably do not need a computer.

No matter what the business, don't leave it to individual departments to decide what should be done, or why, or how. A computer has to be of paramount interest to top management—and management must start with a definite point of view on the final result it wants to accomplish, even if that involves drastic reorganization.

Don't waste a machine on jobs that can be done in other ways just as economically—simple sorting operations, or storage of masses of information that do not require manipulation. All you are doing is keeping the machine tied up away from more productive uses.

Don't assume any computer will be a cure for current system ills. If you haven't the courage to clean up your systems first, no computer will do it for you.

Consider the physical limitations of the computer. Input and output are as important as computing speed—and sometimes the time they take will cancel out the computer's speed.

Consider all the costs, the hidden and preliminary, as well as the ostensible running expenses. Remember that the pure rental or purchase price of the equipment is only part of total costs.

Remember that publicity can boomerang. If you decide to get a computer, keep your mouth shut about what you're "going to do with it"—until you've done it successfully, and can prove it.

Don't assume you can duplicate another company's successful applications. Businesses differ too much in size, present systems, customers, purposes, and operating methods. Even within apparently similar, even rigidly regulated industries, such as railroads or utilities, individual company problems vary widely. Every company's computer use will be unique.

stood the mechanics of the computer, but rarely the mechanics of the company. Today it is generally accepted that it's easier to teach the machine to someone who understands the business. Dependence on a man who "knows a machine" to figure out the best applications for a company is a quick road to trouble.

Today comptrollers, as a group, ride high in computer control. That's partly because accounting had such a big part in early computer usage, partly because in theory, theirs is one department that cuts across a whole company.

But there's a serious debate over their reign. "By and large we have to sell the comptroller first," says a manufacturer's representative. "But the comptroller, usually, isn't young. He operates from fairly rigid and well-defined traditional concepts. These things need a new approach. Besides, comptrollers are as guilty as anyone of empire building and protection of old systems."

Up to Management

The real question is not which individual has the nominal responsibility, but to what degree a company management is willing to change its traditional concepts.

Nor is it any longer a question of finding men to "run" the machine. "Computer people" are now considerably more available. One estimate is that by 1966 "more than 10,000 large-scale digital computers will be in operation in the U. S., and that more than 170,000 professionals must be trained to run them."

International Business Machines alone last year put 14,000 "students" through three- to four-week programing courses for its large and medium-scale machines. All that's needed: an average intelligence, an aptitude for "logical" thought, and in most cases, no more than a high school diploma.

This hardly makes the graduates "professionals." Of the minimal 13 persons working directly on a large-scale installation, not more than three, on the average, would earn over $7,000. But a company itself can—and generally must—train the best of these into "systems" men.

The real problem today is finding men who are able to "use" the machine to best advantage. That must be a top-level determination. Responsibility cannot be delegated, even though it may be more comforting to assume that a team of experts has the whole thing under control.

• **Jolt**—State Farm Life Insurance Co., Bloomington, Ill., learned that, luckily, at a fairly early stage. In 1955, it had 15 medium-scale computers on order, one for each regional office. Its president wondered why the program wasn't moving faster, surveyed the men in the individual programing units. Here's the picture—probably applicable to two out of every three computer installations generally—that emerged.

No one had exclusive responsibility for preparation. There was little advance planning, no clear definition of what was expected. Management was dragging its feet on changing practices. The computers had been generally thought of in terms of converting existing machine systems, but with no value put on the time that might be saved, and with little thought of tackling problems of broader scope. Computer planners and the accounting department were at odds, and certain areas of the company were insistent that, computer or no, they receive information "just as they always have."

The answers, says a top official, "pushed us out of our state of contentment, made us look upon the utilization of electronic equipment as a major responsibility of management transcending all departmental lines."

Without solid top management direction—and intent—mechanization of routine will always be easier than any integrated "total system" approach.

Problem in Human Relations

Suspicion is inherent in the introduction of any computer. Notes a consultant dryly: "A surprising number of

For whatever you make . . .

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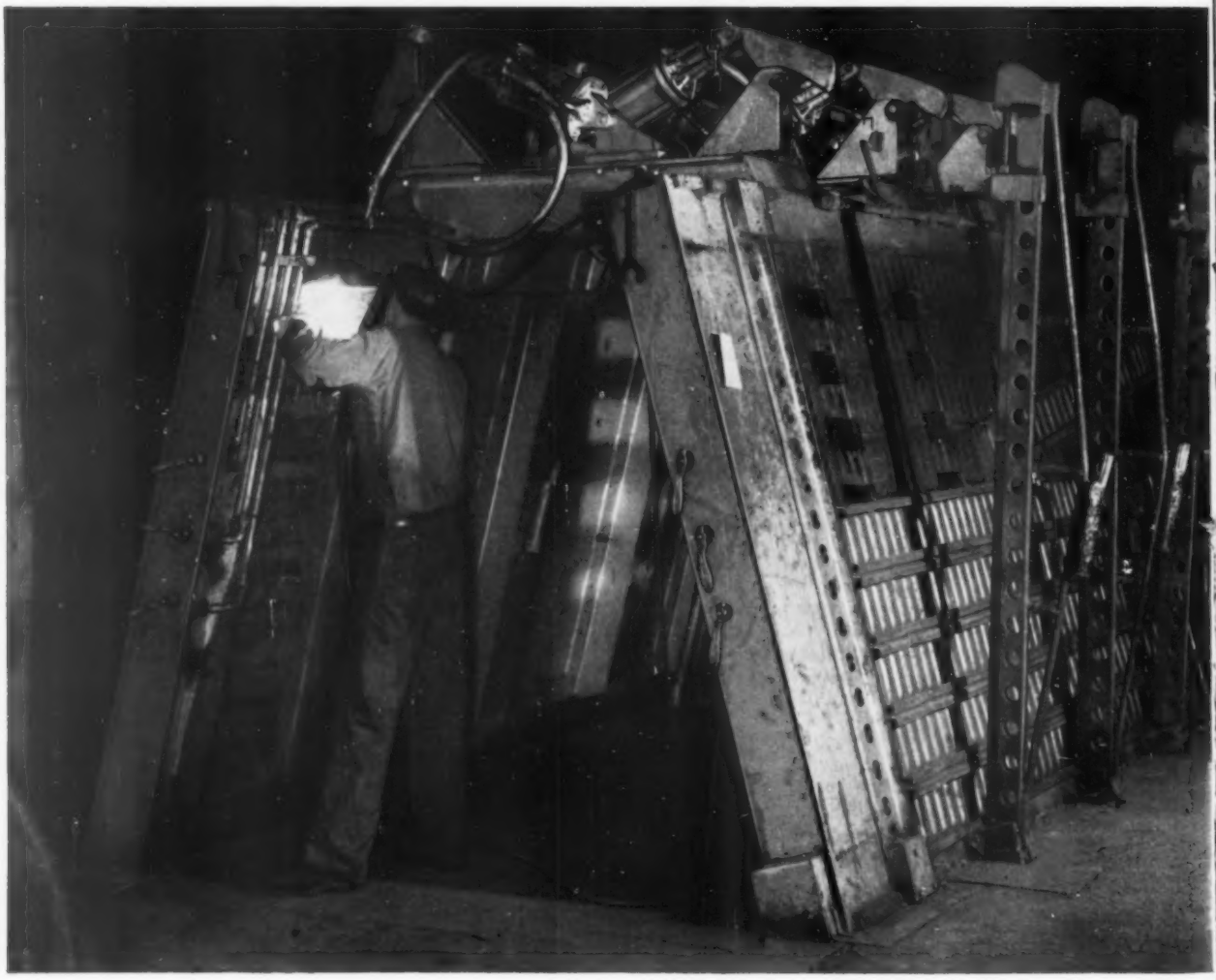


Today's emphasis on fast mechanized freight car loading and unloading brings the superior qualities of N-A-X HIGH-TENSILE steel into sharp focus.

For boxcar flooring, increased mechanization means bigger, heavier and faster moving lift trucks, added abuse from still more weight concentration. For gondola flooring, increased mechanization means still more load impact and abrasion to go with the deteriorating effects of constant exposure to weather.

N-A-X HIGH-TENSILE steel solves these troublesome problems like none other. Used in Stran-Steel Corporation's famous N-S-F®, nailable steel flooring, N-A-X HIGH-TENSILE builds in extra strength, adds longer life. And top resistance to impact and atmospheric corrosion, plus ready weldability, makes N-A-X HIGH-TENSILE exceptionally suited to the special needs of railroad equipment manufacturers and railroads alike. No wonder sixty-three of the nation's leading railroads have ordered N-S-F for their freight cars.

CHECK THESE IMPORTANT ADVANTAGES FOR YOUR JOB:

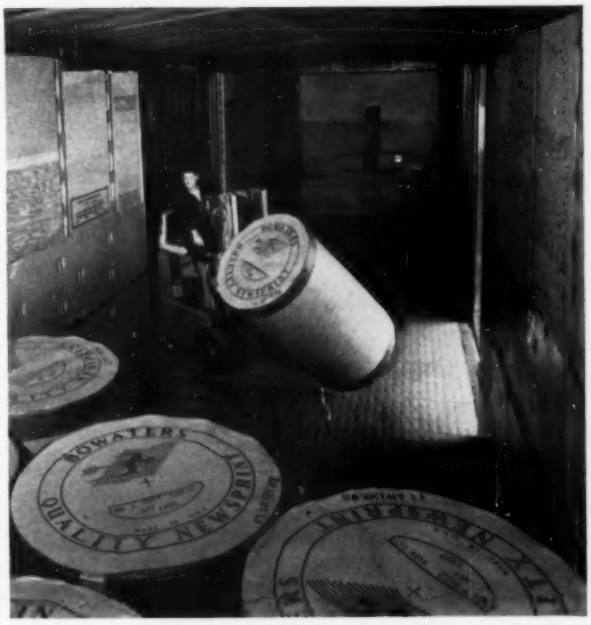
N-A-X HIGH-STRENGTH steels—both N-A-X HIGH-TENSILE and N-A-X FINEGRAIN—compared with carbon steel, are 50% stronger • have high fatigue life with great toughness • are cold formed readily into difficult stampings • are stable against aging • have greater resistance to abrasion • are readily welded by any process • offer greater paint adhesion • polish to a high luster at minimum cost.

Although N-A-X FINEGRAIN'S resistance to normal atmospheric corrosion is twice that of carbon steel, N-A-X HIGH-TENSILE is recommended where resistance to extreme atmospheric corrosion is important.

For whatever you make, from steel shop boxes to steel freight cars, with N-A-X HIGH-STRENGTH steels you can design longer life, and/or less weight and economy into your products. Let us show you how.

Here again, N-A-X HIGH-TENSILE steel proves its ready weldability. To manufacture Stran-Steel Corporation N-S-F®, nailable steel flooring, no less than eight separate welds between each two channels are required.

Tough N-S-F®, nailable steel flooring of N-A-X HIGH-TENSILE, has already won wide acceptance with leading railroads everywhere. So much so, in fact, that more than 50% of all new boxcars now being built are ordered with it.



This typical modern fork-truck with its giant newsprint roll weighs a whopping 5,500 pounds! N-A-X HIGH-TENSILE takes even this kind of concentrated abuse easily, lasts for the life of the car.

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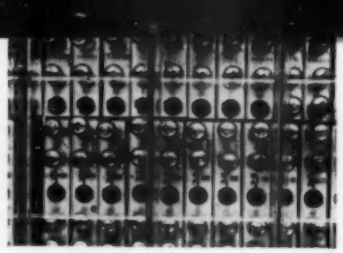


executives owe their position to a particular system they may have been responsible for introducing and administering. If you throw out a man's system, what happens to his job? You can hardly expect him to cooperate wholeheartedly in abolishing it."

But that's not the only form in which the human problems come up: A railroad had its program bogged down for two years while it squabbled with the union. The quarrel was not over displacement of workers, but rather whether computer personnel and working conditions come under the union's jurisdiction.

The labor group's argument: Since the work being done by the computer used to be done by union people, it's still union work.

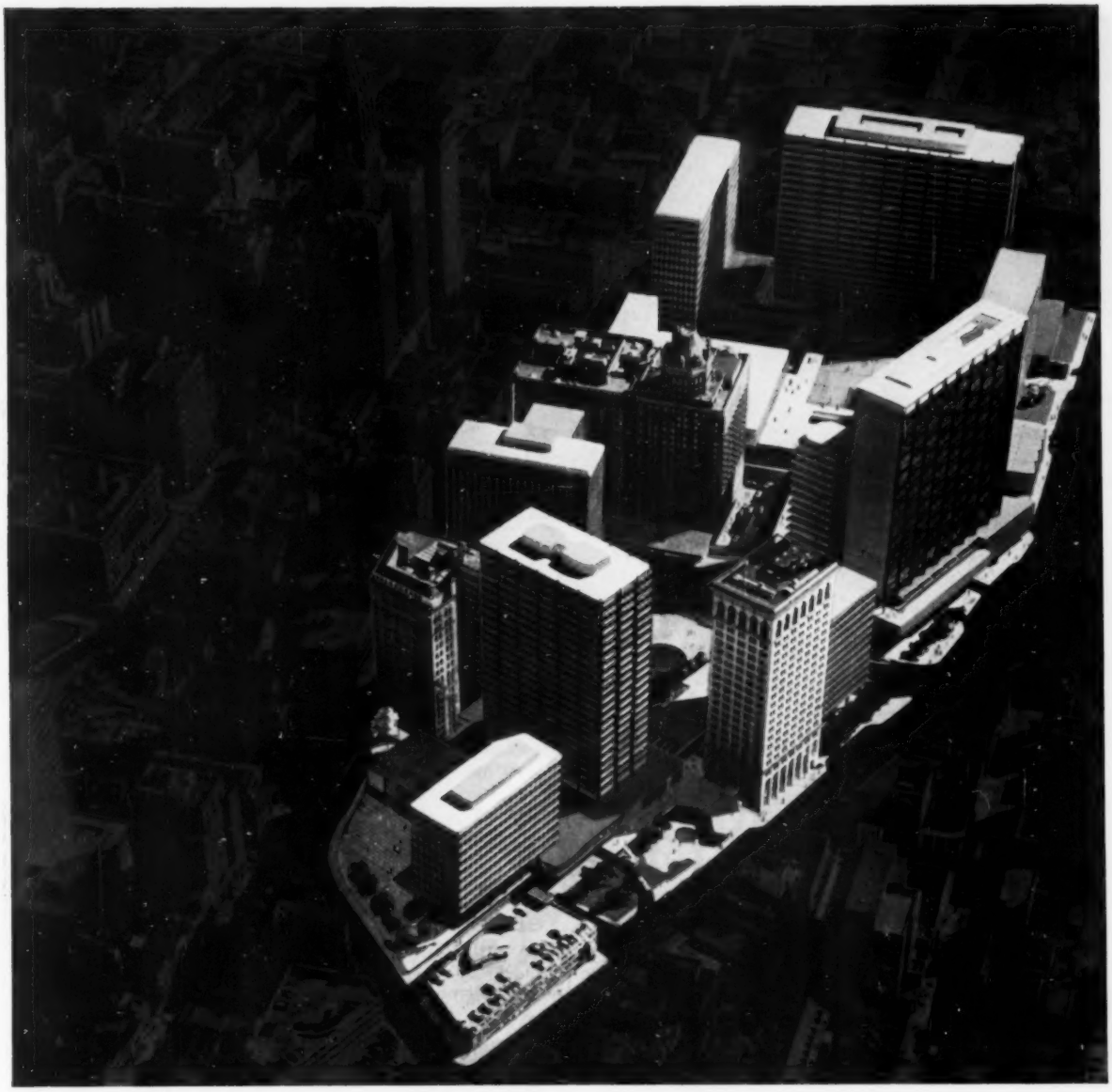
Trouble frequently arises long before a computer comes in, and the jockeying for control starts early. The sales manager of one computer maker reports that the internal political climate of a company affects the decision on both purchase and use to such an extent that "the salesman . . . has to become an expert in the internal politics of the company. If he makes his pitch to the 'wrong side,' the machine may not be sold, or stay sold."

• **War of the Generations**—Not unexpectedly, age warfare comes into the picture, too—the seasoned top brass against the new and younger "computer breed." The trade magazine Computers and Automation, surveying the approximately 12,000 "computer people" now listed, found that 70% were under 37, 40% under 32. This group has had less seasoning in business, is less bound by tradition—and may be a little too anxious to do tricks that can be done as well or better by other methods.

In some cases, disagreement has flared into almost open dissension. That's the case in one large company, where multiple installations are under the comptroller's authority.

The computer group is restive. "We've got a lot of ideas," says one of them, "they won't even let us try because it might change things that are sacred around here. This stuff won't work until computer departments get a status of their own, cutting across the board, with the authority to do what has to be done."

Says the comptroller: "We have high hopes for the ultimate use of the computer. But these men sometimes want to change things just for the sake of changing. They seem to assume that



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Baltimore's civic spirit makes itself evident in the Charles Center Plan.

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All this adds up to new vitality for downtown Baltimore . . . based on sound city planning principles.

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anything that was set up before they came around is no good. We've got to take this a little slowly."

Into the Computer Age

This particular warfare will ease over the next generation. Today's old-timers will be gone—and today's computer kids will sit in their place. Some of the dreams will come true.

Complete corporate centralization around a computer may never happen. Some early attempts have fumbled badly—original plans overlooked the fact that when a company has multiple plants, each does things differently—usually because requirements and purposes of each differ. That factor alone should defeat a deadening standardization.

But more and more new companies, or new divisions, will be initially created around an electronic control system, have a better chance to integrate properly from the beginning.

• **In Everybody's Life**—Bigger, better, and cheaper equipment may make computers reach deeply into the personal lives of most of us. In Illinois, a medium-scale system already keeps track of 4.7-million licensed auto drivers—by name, address, date of birth, sex, and driving record—and even determines fines for certain specific violations.

Should the time come when it might be desirable, it is conceivable that vast central computer systems could keep track of every individual in the country from birth to death, recording education, occupational experience, even personal characteristics.

And extensions of today's "faster reports" might even some day beat the business cycle, with the effect of every transaction upon all factors of the economy analyzed almost immediately, total and correct figures transmitted in place of today's three-month to two-year-old statistics based on samples and estimates.

Neither the hardware, the manpower, nor the money for such tremendous applications are available today.

But they will be.

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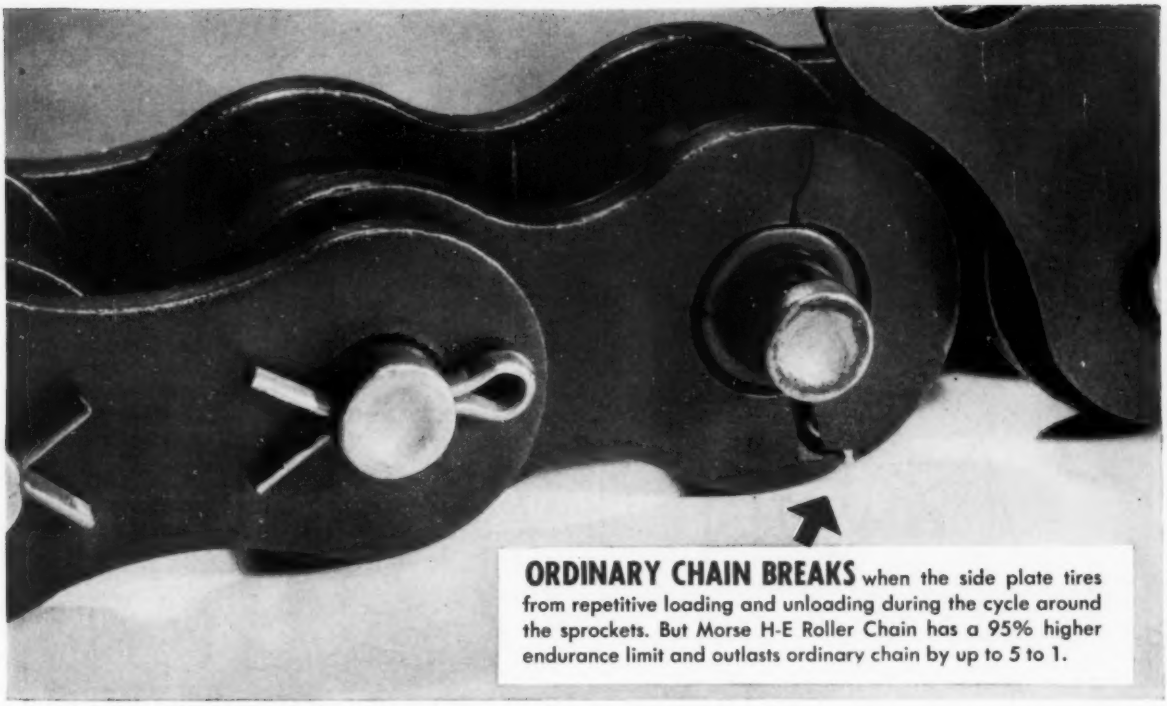


ORDINARY CHAIN BREAKS when the side plate tires from repetitive loading and unloading during the cycle around the sprockets. But Morse H-E Roller Chain has a 95% higher endurance limit and outlasts ordinary chain by up to 5 to 1.

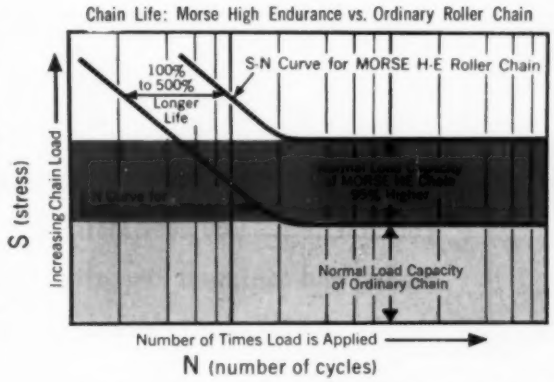
"Tired Metal"... the bane of chain now licked by MORSE H-E

Morse H-E Roller Chain has up to 500% longer service life . . . cuts replacement and labor costs

The unretouched photograph shows what happens to chain when the metal fatigues. But now a special Morse process has licked the "tired metal" problem. It gives Morse H-E Roller Chain 95% higher endurance limit . . . and up to 500% longer service life.

The special process means Morse H-E Chain costs about 10% more. But that's a small price to pay for a heavy-duty chain that can save you thousands of dollars annually in replacement costs, downtime, and wasted man-hours.

For more information on the chain that licked the "tired metal" problem once and for all, see your local Morse Distributor. Or write: MORSE CHAIN COMPANY, Dept. 3-68, Ithaca, New York. Export Sales: Borg-Warner International, Chicago 3, Illinois.


Chain Life: Morse High Endurance vs. Ordinary Roller Chain
S-N Curve for MORSE H-E Roller Chain
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Normal Load Capacity of Ordinary Chain
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Red area: Under these chain loads, fatigue will break ordinary chain . . . but *not* Morse H-E.

White area: Under these loads, fatigue will break ordinary chain and Morse H-E . . . but Morse H-E will have operated 100% to 500% longer.

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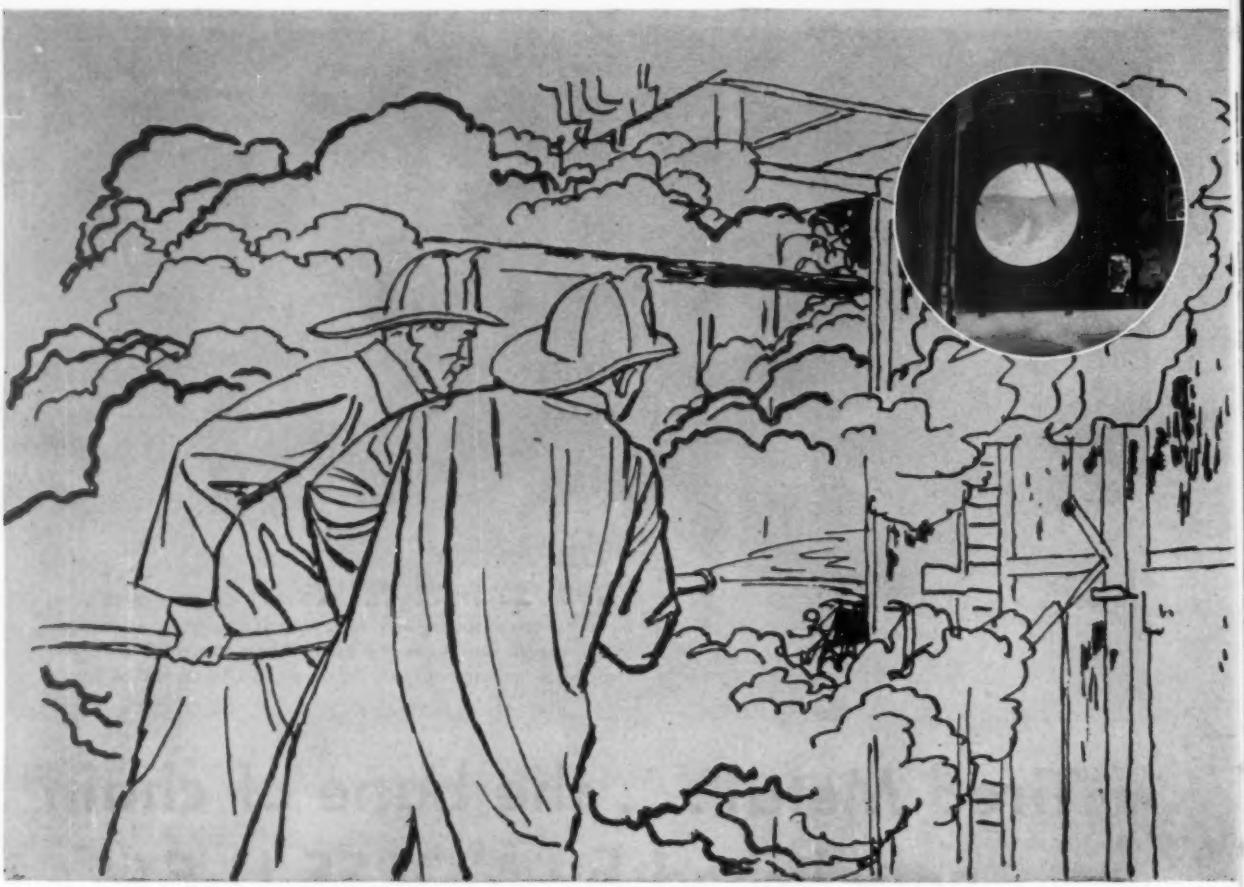

1 On Sunday, March 16, fire broke out in the smokehouse of Bluebird Food Products, Philadelphia. Flames spread from a pan of meat fat to the walls and roof. All instruments and wiring were damaged. Inset shows the Honeywell thermometer-controller that withstood the blaze.

Honeywell service begins when you first decide you need instruments, and continues long after they're installed. It includes:

- Preliminary engineering, even before specifications are written.
- Application engineering for installation and startup.
- Service engineering help from your nearby Honeywell branch.
- Periodic service and swift help in emergencies.
- Training of your operators at the Honeywell Instrumentation Education Center.

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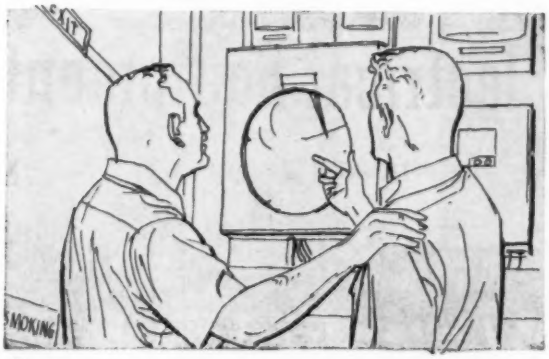
"TRIAL BY FIRE"

proves quality of Honeywell instruments and service

Thermometer-controller scorched in meat plant fire back on job 3 hours after call for service

2 Next morning at 9 o'clock, Mr. Herbert Cook, owner of the plant, called Honeywell's Philadelphia branch for service on the badly-scorched Honeywell thermometer. Two other thermometers were damaged beyond repair.

3 A service engineer arrived promptly from the nearby Honeywell branch. He replaced a door glass and recalibrated the thermometer—the only repairs required. A heavy metal case enabled the instrument to withstand the fire.



4 By noon the service engineer had the Honeywell thermometer back on the job. Only three hours had passed since Mr. Cook had called for service. With repairs to the building and replacement of the two destroyed instruments, plant operations could resume.

5 Mr. Cook had the destroyed thermometers replaced by Honeywell instruments. He wanted the assurance of prompt service whenever it might be needed again.

Honeywell

H HONEYWELL

First in Controls

Fire-fighting vehicles which must keep on fighting call for . . .

Delco-Remy Extra-Duty Electrical Equipment

to supply the extra electric power they need

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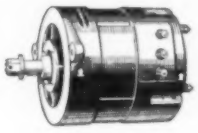
Delco-Remy extra-output a.c.-d.c. charging systems assure the extra electrical power needed in such service. Their special performance characteristics keep electrical accessories working at top efficiency. Delco-Remy extra-output generators with matching regulators protect batteries against excessive discharge and cycling effects. Batteries stay charged, and last longer.

Be sure to specify Delco-Remy extra-output electrical equipment, including the new longer life Delco batteries, on the new vehicles you order, and when you re-equip present ones. Both 6- and 12-volt a.c. application packages are available.



Model 1117103 is a Delco-Remy 12-volt a.c. generator widely used on fire-fighting vehicles. This dependable unit can provide up to 105 amps. under pumping conditions.

GENERAL MOTORS LEADS THE WAY—STARTING WITH

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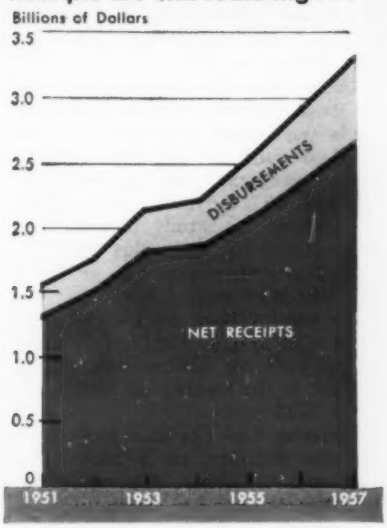
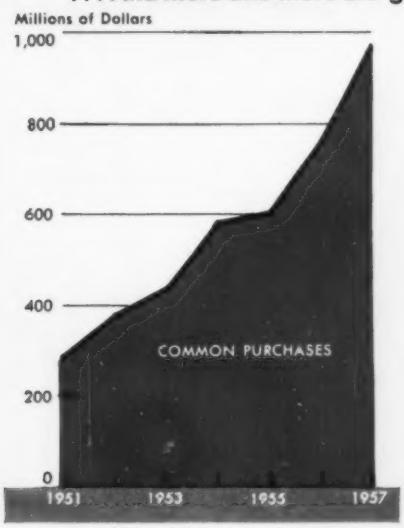
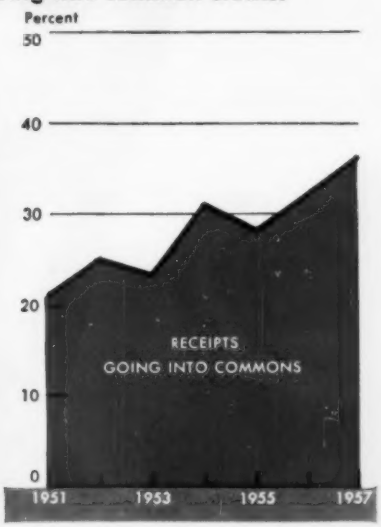
The Pension Funds:

Receipts are still rocketing . . .

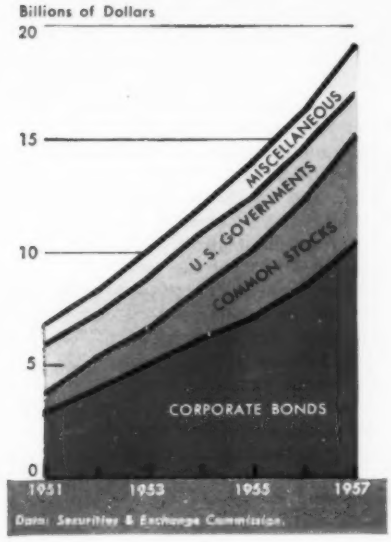


. . . And more and more are going into common stocks.

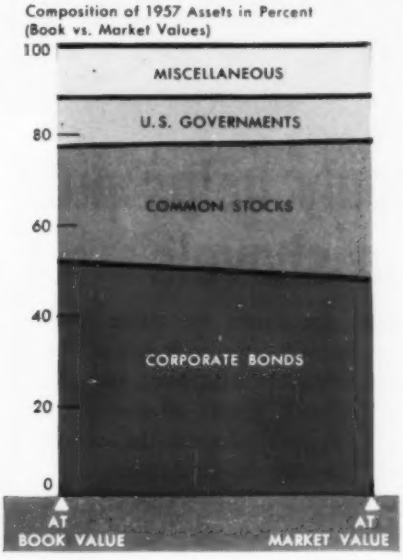




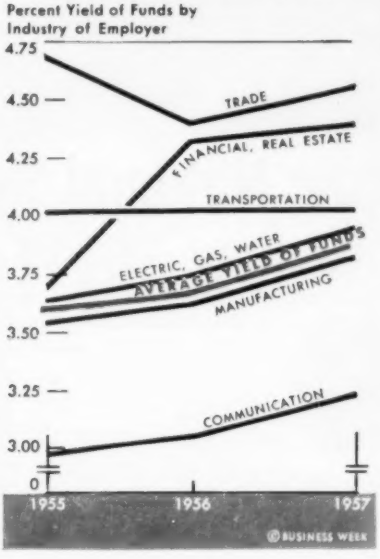
On book value, corporate bonds still remain the largest holding . . .



. . . But on market values, the spread favoring bonds narrows sharply . . .



. . . And the trend towards commons has been helping to raise the investment yield.



The Assets Keep on Climbing

Corporate pension funds are flourishing more lustily all the time.

Take a look at the growth figures. The Institute of Life Insurance reports that last year the reserves of the funds handled by U. S. insurance companies jumped 13%, to a record $14-billion. And the more numerous funds not handled by insurance companies grew even faster; they went up 16%, to a record $19.3-billion, according to the annual pension survey of the Securities & Exchange Commission, issued last week. That total is 2.8 times the asset figure in 1951, when SEC began keeping score. Receipts also grew at a gaudy pace, topping 1956 by $400-million to reach a $3.3-billion figure that was more than double the amount six years earlier.

• **Market Value**—What's more, the SEC figures are based on what the assets originally cost the funds—their book value—rather than on their market value at the end of 1957. Hence the survey does not reflect many big capital gains built up over the years that the assets have been held. If you figure the market value of the noninsurance funds at the end of 1957, the assets climb close to $19.9-billion, which tops their book value by about $500-million.

The size of those capital gains is due

How National Supply helps put new *SHOVE* in shovels

As every sidewalk superintendent knows, when an ordinary power shovel hits a rock too stubborn to budge, the operator has to back off and try again . . . or stall the engine.

The story is different when the shovel is equipped with a National Torque Converter. The engine delivers its maximum torque output, runs at normal speed. The converter receives the torque, multiplies it up to three times, and passes it on to the bucket. The torque increases as resistance grows; the slower the movement, the harder the shove. Conversely, when the rock moves, the bucket rapidly accelerates, speeding up the work. Finally, all shocks and jars are absorbed within the converter. Thus, the shovels do more work; earn more profit, last longer with less down-time, less repair and lower maintenance.

We build torque converters, like all our products, the very best we know how. In design, in materials, in construction, and in ultimate inspection they reflect a deep-rooted pride in workmanship that is our customers' best guarantee of satisfaction.

THE NATIONAL SUPPLY COMPANY

Two Gateway Center, Pittsburgh 22, Pennsylvania

entirely to the growing popularity of common stocks among the fund managers. Last year the managers poured 35.6%—or $978-million—of their entire income into common stocks, up from 32.3% and $771-million the year before, and way above the 21.6%, or $291-million, in 1951.

The new love for common stocks did not mean that the old love—corporate bonds—was entirely discarded. Far from it. Book value of the funds' investments in corporate bonds climbed $1.7-billion in 1957; the record rise was probably due to the steady rise in bond yields during the year, plus their traditional defensive qualities at times when the stock market is weak.

The yen for bonds did not extend to government issues. Holdings of these fell off 11%, or $261-million, during the year, to the lowest mark ever noted by the SEC survey.

• **Summing Up**—The end product of all these shiftings, on a book value basis, ends up with total assets at the 1957 year end breaking down this way:

Corporate bonds made up 53.8% of the total, for a fat $10.4-billion.

Common stocks accounted for 24.7%, or $4.8-billion.

Government bonds made up 10.5%, or a bit over $2-billion.

Miscellaneous investments accounted for the remaining 11%.

When the same assets are figured on the basis of market value, the figures change rather drastically though the order remains the same.

Corporate bonds, by this yardstick, fall $600-million below their book value, and make up only 49.3% of over-all assets. Common stocks at the same time shoot up by $1¼-billion, and make up 30.3% of the total.

• **More Volatile**—There's a quite different side to the bond-stock discussion that must not be overlooked. While bonds bob up and down with the vagaries of the money market, they are nowhere near so volatile as the run of common stocks, even those blue chip shares so dear to the fund manager's heart.

This emerges vividly if you scratch below the surface of the SEC survey. Tight money conditions last year did cause the $600-million drop in the market value of bonds held compared with their book value. But the loss was markedly less than the $800-million revealed in 1956.

Stocks tell a quite different story. With the bear market chipping away at prices, their market value at the 1957 yearend topped book value by only $1¼-billion compared with a capital gain at the end of the previous year of close to $1.9-billion—or 50% more than in 1956. Even at the 1955 yearend, the capital gain was $1.8-billion.

The effect of this has been to reverse the steady increase of relative impor-

Trans-Flo hose nozzle
molded of Tenite Butyrate
by The Vichek Tool Company,
Cleveland 4, Ohio.

Four parts of **TENITE BUTYRATE** form this tough, lightweight nozzle

Here's a good example of how a switch to Butyrate plastic can mean an improved product, with savings in both material and manufacturing costs.

Four parts of transparent green Tenite Butyrate make up this product. Assembled in an adjustable, leakproof fit, they form an attractive and durable hose nozzle which sells at a popular price.

These four plastic parts, including the threads, were injection molded in one quick operation. The "manufacturing" process consisted only of molding and assembly. By avoiding use of metallic parts, there was no casting, no forging, and no machining, even for the threads.

And look how well Tenite Butyrate meets the performance needs: It is a tough plastic, virtually shatterproof and ready to take a good measure of abuse; yet, it's light in weight. It resists corrosion and endures outdoor exposure over broad variations in temperature and humidity. Color is an integral part of the product and will not chip off or wear away. Tests show the assembled nozzle has withstood water pressures up to 500 psi.

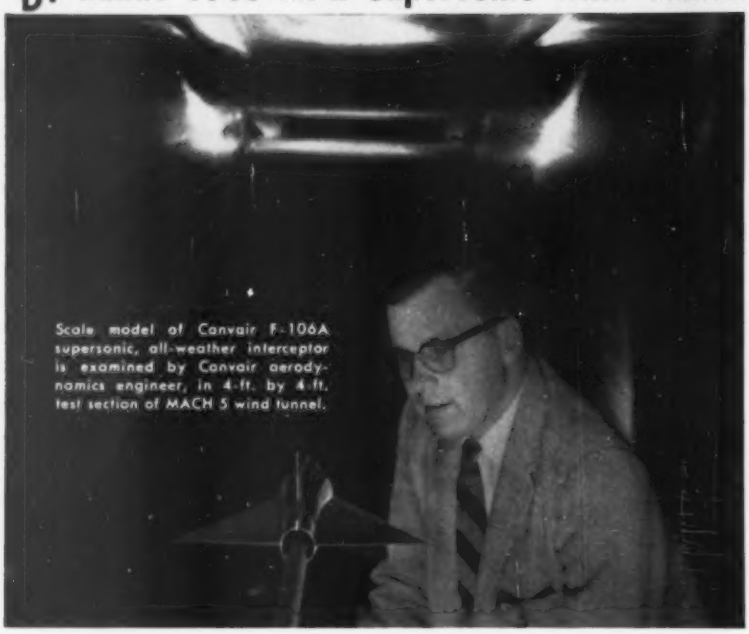
Remember this use of Butyrate whenever you need a tough, outdoor plastic, readily adaptable to design. Tenite Butyrate is available in a wide range of flows and colors for injection molding or continuous extrusion. Look into the design and economy possibilities offered by this versatile plastic. For more information on Tenite Butyrate or any other Eastman plastic, write EASTMAN CHEMICAL PRODUCTS, INC., subsidiary of Eastman Kodak Company, KINGSPORT, TENNESSEE.

TENITE

BUTYRATE · ACETATE · POLYETHYLENE

plastics by Eastman

CB&I builds 3700 MPH Supersonic Wind Tunnel



Scale model of Convair F-106A supersonic, all-weather interceptor is examined by Convair aerodynamics engineer, in 4-ft. by 4-ft. test section of MACH 5 wind tunnel.

CONVAIR benefits from "Turn-key" approach

CB&I was the prime contractor for this country's first "turn-key" supersonic wind tunnel at Convair Division of General Dynamics Corporation, San Diego, California. CB&I specialists handled the engineering, fabrication and assembly of the unique $3.5 million, intermittent, blow-down type tunnel, working in cooperation with *FluiDyne* Engineering Corporation.

The Convair tunnel is one of several supersonic wind tunnel installations in which the *coordinated* engineering, fabricating and erection services of CB&I are playing a major role. The same, *one source* service for creative *craftsmanship in steel* plate structures is available to meet *your* most exacting requirements. Write your nearest CB&I office for the bulletin: *CB&I Special Plate Structures.*

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B-20

tance that the common stocks have shown over the years in the portfolios of the pension funds. Thus the 1957 yearend ratio of 30.3% must be compared with 32.2% the year before. By the same way of figuring, the corporate bonds ratio of 49.3% of resources at the 1957 yearend compares with 45% the year before.

• **The Over-All Growth**—The SEC says that manufacturing companies over the years have accounted for the biggest growth, and 1957 was no exception. The assets of funds set up by manufacturers climbed $1.8-billion during the year, to a record $12.2-billion. Funds set up by all other segments of business went up only $850-million during the year, to $7.1-billion.

Broken down by trades, the pension funds find their biggest consistent gains in steel and automobiles. Broken down by choice of investments, transportation companies and manufacturers—notably in iron and steel—lean most strongly to common stocks.

It's natural enough for corporations to place some but usually a small percentage of their pension funds in their own stock. As a result, such holdings aren't notably large over-all. At the end of 1957, they totaled only $860-million and made up only 14% of holdings, on a basis of market value.

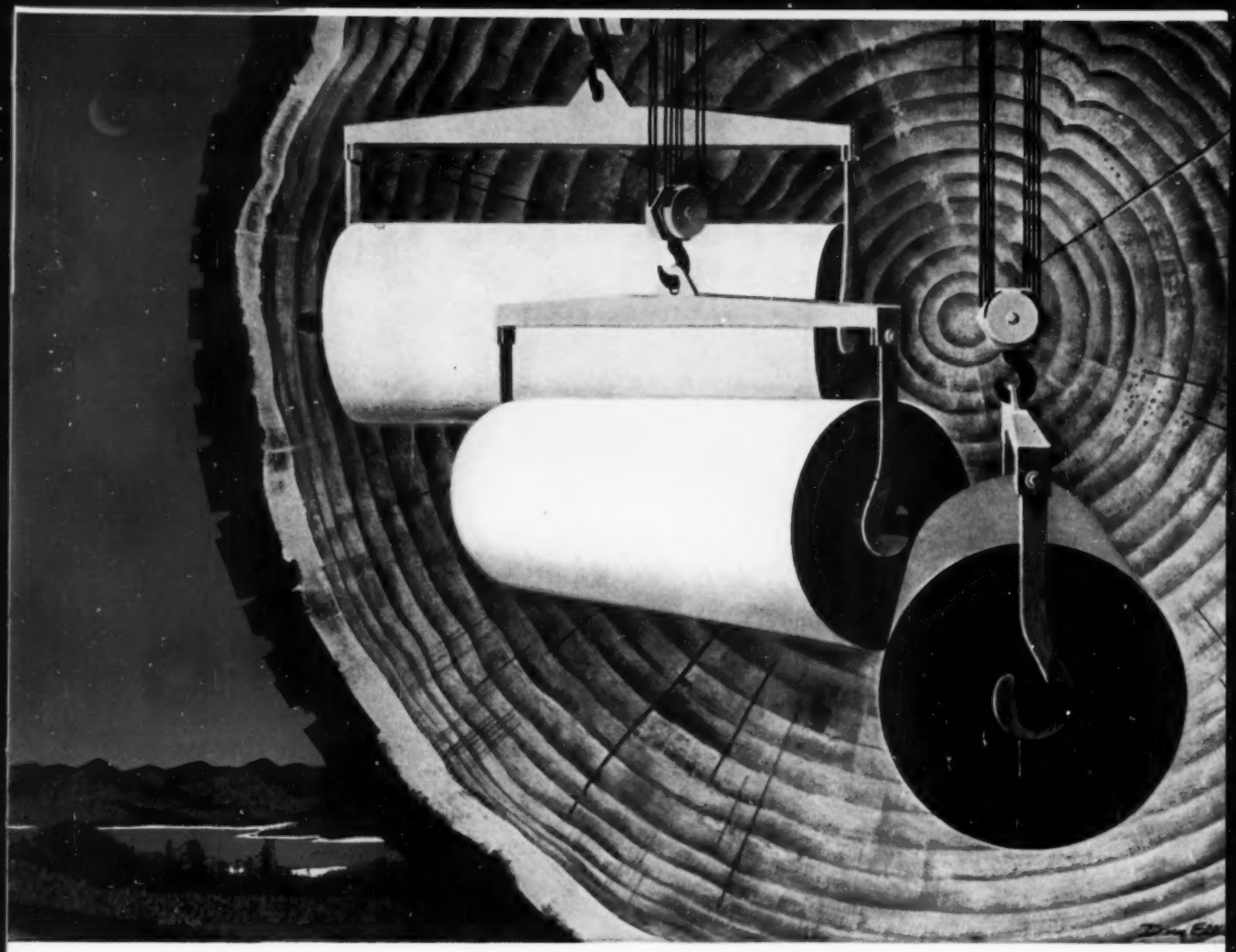
Here are some other observations on the SEC survey:

• Common stocks are not always locked in the pension fund portfolios, despite the common belief that they are rarely sold. Last year, sales of commons added up to some $208-million or 17.5% of purchases. The ratio was 22.9% the year before, and 29% back in 1955.

• Of the total fund receipts last year, 70%—or $2.3-billion—came from employers, while employees chipped in only 9%, or $316-million. Interest and dividends accounted for 20%, or $667-million, with the remaining 1% from scattered sources. Investment income has been growing in importance, thanks largely to the greater importance of commons as fund holdings; it was only $500-million in 1956, and only $200-million in 1951.

• Disbursements have grown as expected to match the swift increase of the funds. Benefits in 1957 were $640-million, as against $544-million the year before, and $225-million in 1951. But the expenses of operating the funds have actually been shrinking—to $12-million last year, from $13-million in 1956, and $14-million in 1955.

• The funds collectively continue to show comparatively little interest in mortgages. Although their yields are higher than corporate bonds, mortgages showed an increase of only $83-million last year, to $313-million. That's 2% of the book value of all assets. **END**



Paper... all wrapped up with progress

Uses multiply, demand increases as living standards rise

Paper wraps our food, helps build our homes, records our business. It serves education, health, government, and recreation in countless ways. And, on occasion, it has even given new life to our economy. "Farming" trees for pulpwood is now a new source of income for the South and other areas.

With the highest living standard in history, America's 6% of the world's population consumes nearly 60% of the world's paper production. Our forests and mills must supply paper for almost 200 billion bags and boxes... 14½ million miles of paper napkins... 190 million textbooks each year.

Other useful applications are demanding tremendous new quantities of paper, too. Book publishers now use almost 2 million tons of paper every year, thanks to the popularity of paperbacks and book clubs. The increase in advertising and new-found leisure time call for additional tonnage also.

Still, the industry is out to woo even more markets with new papers that are stretchable, flame-proof, insect-proof, or waterproof.

With a single papermaking installation costing as much as $50 million, paper men need a complete bank – one with the resources and experience to take a creative approach to financing. At First National City they find not only the necessary lending capacity, but also bankers who understand their industry and offer financial counsel.

As the paper industry looks ahead to establishing new mills abroad, it will find the Bank's on-the-scene facilities in South America and other key areas indispensable in helping to arrange credit, locate mill sites, procure personnel, and assist in all the financial problems expansion overseas entails.

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Correct Lubrication in Action...

How Mobil Saved

This dramatic operation shows parts of TV tube being joined on Electric Sealing Lathe. Edges of tube parts are softened by gas flame, then sealed by high-frequency electric current when glass becomes hot enough to conduct electricity.

Mobil

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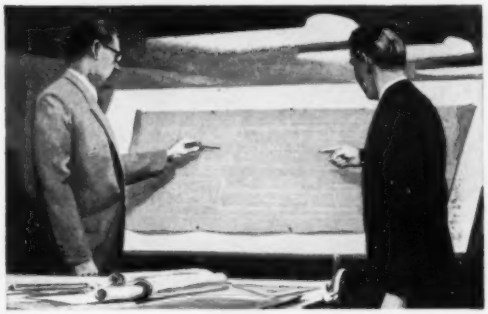
Corning Glass $14,880

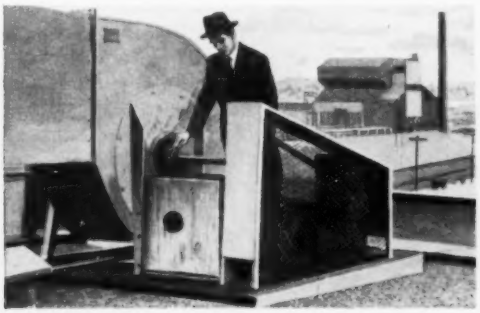
Since making the bulb for Edison's lamp, Corning Glass Works has continually pioneered in the development of new types of glass. At the same time Corning has developed intricate machines and manufacturing methods that enable it to produce the most precise glass items at production line pace.

Mobil has worked with this company for many years. It has met the challenge of demanding and often unique lubrication requirements with products and service so effective that they have resulted in constant and significant savings. Corning's records show that, in 1957 alone, savings made through Mobil Correct Lubrication amount to over $14,000.

Some of these savings are briefly documented below. All of them are the result of Mobil working hand-in-hand with Corning personnel . . . training them in maintenance methods . . . studying production problems, making lubrication studies . . . using Mobil research and laboratory facilities to cut costs, keep pace with Corning's needs. Why not find out how Mobil *Correct Lubrication* can reduce maintenance costs, increase profits in *your* plant?

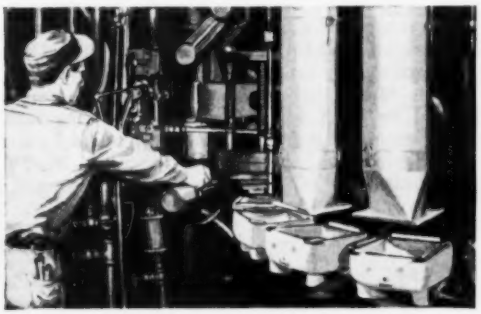


Lubrication study increases maintenance efficiency—Mobil engineers working with maintenance supervisors made complete study of machine lubrication requirements and application . . . even blueprinted oiler routes down to last detail . . . saved maximum time and money for Corning.



Outdoor bearing replacement eliminated—Air circulating system power units located on plant roof are subjected to abnormal corrosion and temperature extremes. Mobil maintenance recommendation cut servicing time by 300 hours . . . eliminated bearing replacements . . . saved $920 a year.

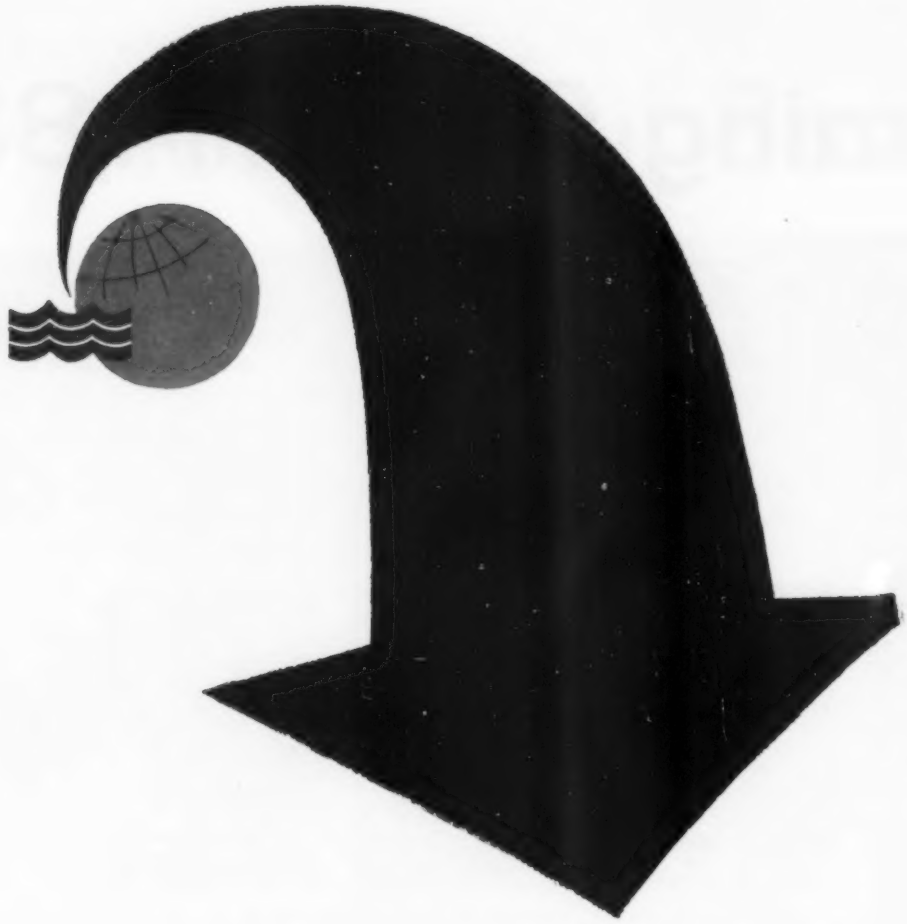
$2,785 saved on lift-truck maintenance—Prior to Mobil recommendation, Corning's gasoline-powered lift-trucks were overhauled every 4 months. Use of *Mobiloil Special* lengthened overhaul period to 12 months, cut oil consumption in half, reduced maintenance time by 144 hours a year.



Shear spray lubricant saves $11,175—In automatic glass-forming machines, steel shears that cut molten glass were pitting, rusting, leaving excessive "shear" marks on molded material. Mobil introduced product, about 1/10 cost of previous lubricant, to cut reject rate, reduce maintenance and parts replacement.

Correct Lubrication

Another reason You're Miles Ahead with Mobil!



LIVE TV—FROM OVER THE SEA—IS HERE

Yes—here today! Live TV is being "beamed" far over the horizon between Florida and Cuba—a clean, sharp picture with clear, faithful sound—television at its best, and at unheard-of *long range*.

This Miami-Havana link—using radio equipment designed by IT&T—is regarded as the outstanding radio achievement of the year. It is a miraculous new method of communication—transmitting not only the TV "signal" but hundreds of telephone conversations at once. It means that world-wide live TV is fast on the way.

A revolutionary new system

Some day you'll be tuning in London—or Tokyo—or Rome—or Rio. Not on film, not on tape—but *live*. It's all possible now—thanks to a revolutionary new transmission system called "broadband" over-the-horizon microwave, developed by IT&T engineers.

It recalls another important "first" for IT&T in microwave radio. 27 years ago, IT&T engineers beamed the *first* microwave signal across the English Channel—by line of sight—and ushered in a new age in communications. But broadband over-the-horizon microwave is something different—something new. A powerful signal is beamed far into outer space. Some of it is reflected by the troposphere. This part bounces back to earth, and is gathered in by huge, sensitive antennas.

One of many IT&T contributions

Thus IT&T makes another far-reaching contribution to television. There are many more. High-gain antenna systems to increase coverage. Special coaxial lead-in cable. Studio-to-transmitter and inter-city links. And, at the heart of all modern television lies a group of important basic inventions by outstanding members of the IT&T technical staff here and abroad. Of importance in every phase of television, these inventions benefit the whole industry.

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In Business Abroad

• • •

Quebec City Is Striving to Lure U. S. Industry Across the Border

At a time when U.S.-Canadian trade relations have grown more acid than amiable, greater Quebec City, capital of Quebec Province, is campaigning to lure U.S. industry.

The city's Industrial & Trade Bureau says that Quebec offers:

• Ample industrial sites along the St. Lawrence Seaway, now being built.

• Canada's only year-round port—800 miles inland—for serving the Great Lakes region and central Canada. Ice breakers keep the port open through the winter.

• Enormous hydropower potential, plus the mineral and forest resources of Quebec Province, which is twice the size of Texas.

• The cheapest skilled labor in Canada, plus large shipbuilding and ship repair yards near the mouth of the St. Lawrence.

Already greater Quebec's industrial roster includes International Harvester of Canada, General Electric Co., Ltd., and Swiss, Anglo-Canadian, and West German companies.

• • •

Willys and British Competitor Negotiate International Tie-Up

The Rover Co. of Britain, producer of the Land Rover—Britain's counterpart to the U.S. Jeep—is negotiating a tie-up with Willys Motors, Inc., for joint distribution of their vehicles in international markets. Land Rover competes strongly with Willys' Jeep in world markets.

Apparently, the projected move is intended to thwart competition from other producers of Jeep-type vehicles particularly in Japan.

Rover says the idea originated from the joint venture between Austin of England and American Motors to manufacture the Metropolitan and the marketing arrangement between Mercedes-Benz of West Germany and Studebaker-Packard.

• • •

U. S., Euratom Reach Accord On Inspection of Atomic Plants

The Administration has reached a compromise agreement on atomic inspection rights with Euratom—Western Europe's six-nation atomic energy community. **The compromise provides that the U.S. Atomic Energy Commission and the new International Atomic Energy Agency jointly oversee the inspection procedures employed by Euratom.**

The AEC had insisted on inspection rights over Euratom's projected atomic power plants, since the plants would be furnished with supplies of U.S. enriched fuels—giving off military byproducts.

Now the Administration hopes to get Congress to recognize Euratom as a sovereign body. This would permit negotiations to go forward between Euratom and the Export-Import Bank for a loan of roughly $135-million called for in Euratom's program. Other parts of the legislative package, such as Congress' authorization to lease more than $100-million in enriched fuels, may have to be delayed until next year.

MORE NEWS ABOUT BUSINESS ABROAD ON:

• P. 106 Argentina's new government has brightened the outlook for Kaiser's Jeep and car business—and for other U.S. companies.

• • •

U. S. Recession Is Pinching Off Some of Japan's Export Trade

Japan is just beginning to feel the effects of the U.S. recession—and the effects may get worse.

The main trouble is smaller U.S. purchases of raw materials produced by countries in Asia, the Middle East, and Africa. This has reduced their foreign exchange reserves to the point where they are no longer able to buy Japanese goods in such large quantities.

Beyond that, Japanese leaders are convinced that stopgap measures to halt U.S. protectionist tendencies—such as Japan's self-imposed quotas on exports—are likely to become ineffective in the near future.

To add to the country's troubles, **Communist China has canceled large orders for Japanese goods.** Japanese businessmen are bitter over the cancellation, timed by Peking to try to influence the recent general elections in Japan. But the sudden loss of sales is a real blow.

• • •

Brazil Makes Nationalistic Moves In Petrochemical and Power Fields

Despite Pres. Kubitschek's warm exchange of letters with Pres. Eisenhower, calling for an inter-American conference, Brazil is undergoing a resurgence of nationalistic fever, with these results:

• Petrobras, the state-owned oil company, will build, control, and operate a new synthetic rubber plant in Rio. The government rejected bids from U.S. and West European companies to build it. Observers believe that Petrobras will now play a big role in development of Brazil's petrochemical industry, which until now has been largely in private hands.

• The southern state of Rio Grande do Sul has approved expropriation of American & Foreign Power's local subsidiary. If the federal government also gives its approval, it may be the beginning of a trend for Brazilian states—most of which supply power only to private companies such as Foreign Power—to play a bigger role in actual power distribution.

Argentina Opens Arms to Kaiser

IKA SHOWROOM in elite section of Buenos Aires sells Kaiser cars and Jeeps produced at company's Cordoba plant.

Pres. Frondizi's government is brightening the prospects for Kaiser's profitable auto business in Argentina.

Since his inauguration on May 1, Pres. Arturo Frondizi has been trying to repair Argentina's run-down economy. So far, he has mostly tinkered with the country's economic troubles. But judging from his realistic approach to date, most U.S. businessmen with a stake in Argentina see hope—for the first time in over a decade—that Buenos Aires really wants to attract and play fair with foreign capital.

One company already entrenched in Argentina and banking on a bright future is Industrias Kaiser Argentina S.A., part of the empire of Kaiser Industries Corp. This year it expects to turn out around 24,000 Jeeps, Jeep station wagons, and Kaiser Carabelas (a slick new version of the discontinued Manhattan model)—and turn a handsome profit at the same time.

• **Willing Buyers**—Over two years ago the company was blacklisted for having done business with Dictator Juan D. Peron. At one point, it had no more than $800 in its bank account. But today IKA is wearing a smile. Its Jeeps and cars are in great demand; some dealers are even selling them at exorbitant black-market prices.

Like many other U.S. companies in Argentina, IKA had feared the rise of Frondizi. Its experience with Peron was enough—and the provisional government of Gen. Pedro Aramburu looked better than an elected government headed by a man whom many observers considered a demagogue. But Frondizi, though mercurial during his campaign, has proved quite eager to open the door to foreign capital—on Argentina's nationalistic but nevertheless friendly terms.

• **Interested Yankees**—As a result, U.S. companies in the past two months have offered to invest nearly $200-million in the country. The new government has almost completed negotiations to compensate American & Foreign Power Co., Inc., for utility properties expropriated by Peron. And it is talking about hiring U.S. and foreign oil companies to help boost much-needed oil output. Companies now dickering with the new government include Tennessee Gas Transmission Co., Pure Oil Co., Standard Oil

KAISER CARABELAS, an Argentine version of the defunct Manhattan, are a bargain at $5,250. U.S. cars sell for $15,000.

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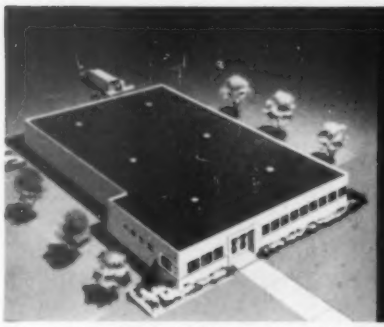

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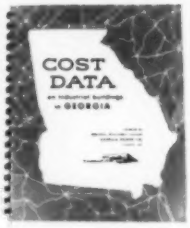

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And IKA, a barometer of relations between the Argentina government and U.S. companies, has squared its future plans with Pres. Frondizi in personal talks at the Casa Rosada, Argentina's "White House."

I. A Coveted Product

IKA's newest product is the Carabela. The first one came off the assembly line at IKA's huge plant at Cordoba two months ago—almost timed to coincide with Frondizi's inauguration. By mid-July, the Carabela will go on sale as the first car made primarily from Argentina parts. By yearend, IKA expects to have turned out 2,500 Carabelas, selling for $5,250 apiece.

The company has other plans, too. It hopes to produce a small passenger car designed specifically for Argentina. It also hopes to make 1½-ton and 2½-ton trucks. Beyond that, IKA is considering enlarging facilities at Cordoba so it can export stampings to the Toledo plant of its parent company, Willys Motors, Inc., which in turn is wholly owned by Kaiser Industries Corp.

• **Dollars Saved**—IKA's local production of Jeeps and cars is saving Argentina precious dollars it would otherwise have to spend for imports. Altogether, the company's output this year will mean a saving to the government of around $50-million. And little more than $100 worth of imported parts will be used for each Carabela. IKA's present goal is to produce Jeeps and cars from 100% locally made parts.

While helping Argentina, IKA is also helping itself to a rich market. There are some 600,000 cars on the roads in Argentina. But on an average they are around 20 years old. And in terms of the country's 20-million population, there are only 32 cars per capita.

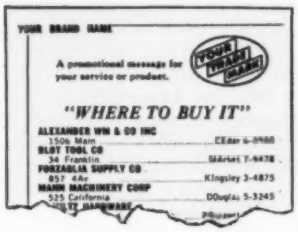
With 24,000 vehicles scheduled to be produced this year and 35,000 for next year, IKA is the largest auto maker in Argentina. General Motors and Ford produce cars and trucks in Argentina. But they use primarily imported parts. And GM, for one, made only 7,000 cars last year, despite plant capacity to build 40,000 annually.

• **Expensive Transportation**—Until recently, most of IKA's competitors have tried to sell to the Argentine market through shipping in already assembled or partly assembled cars. These may cost the customer as much as $15,000—way above the price for IKA's products.

That's because of the surcharge slapped on car imports in 1956 to cut down the drain on Argentina's foreign-exchange reserves. Based on the weight of a car, the system has hit U.S. cars

How Trade Mark Service in the Yellow Pages helps build your business

WHAT IS TRADE MARK SERVICE?



An important link in marketing consumer and industrial products. It pinpoints authorized local sales outlets —branch offices, distributors, retailers and wholesalers.

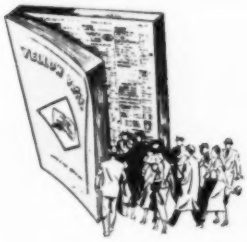
HOW DOES TRADE MARK SERVICE BUILD BUSINESS?

Trade Mark Service makes advertising more effective . . . directs prospects created by your advertising to your authorized outlets . . . helps prevent substitution.

WHAT MARKETS DOES TRADE MARK SERVICE COVER?

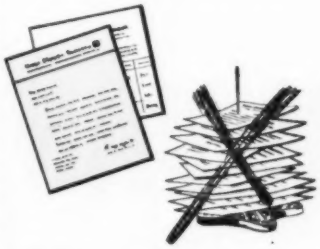
The service is flexible to follow your pattern of distribution . . . in national, regional or selected markets.

WHAT CIRCULATION DO THE YELLOW PAGES HAVE?



Over 4000 different directories are distributed from coast to coast. You can buy all or any part of the 60,000,000 combined circulation.

WHAT ABOUT CONTRACTS AND BILLING?



Whether you buy Trade Mark Service in a few or all 4000 directories, you sign only one contract and receive only one bill a month.

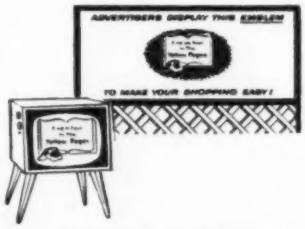
IS TRADE MARK SERVICE COMMISSIONABLE?

Yes, Trade Mark Service in the Yellow Pages is subject to standard advertising agency commission.

WHAT IS THE YELLOW PAGES EMBLEM?

A reminder to buyers to look in the Yellow Pages for local outlets of branded products and services.

WHY IS THE YELLOW PAGES EMBLEM OF VALUE TO ADVERTISERS?

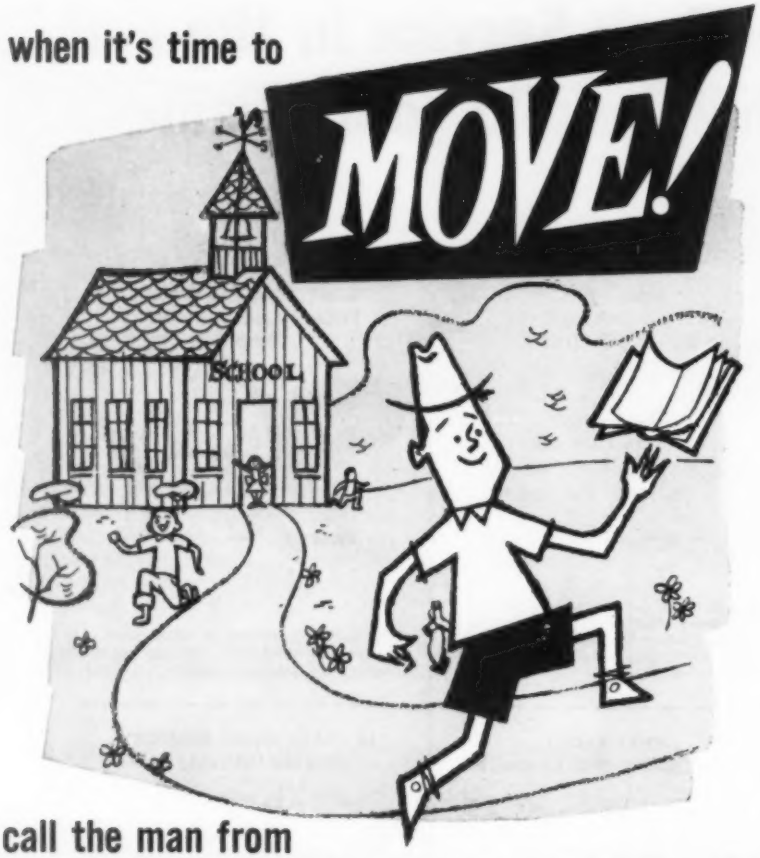


National and local advertising builds recognition of the emblem. Trade Mark Service advertisers profit in increased sales by displaying the emblem in their advertising.

WHERE CAN YOU FIND OUT MORE ABOUT TRADE MARK SERVICE?

Call the Trade Mark Service representative at your telephone business office . . . today!

when it's time to



call the man from

BURNHAM VAN

AGENTS BURNHAM'S VAN SERVICE LONG DISTANCE MOVING

find the Burnham man in the 'Yellow Pages'

FORD VAN LINES

"School's Out Time" means moving time for business personnel. Burnham makes this tough job easy...packs, loads and ships...safely and securely. Helps transferred families get settled too—by unpacking and placing home furnishings at destination. For efficient moving at lowest cost...call the man from Burnham Van.

IN THE WEST, CALL THE MAN FROM FORD VAN

Agents in principal cities

BURNHAM'S VAN SERVICE
Columbus, Georgia

Executive Offices

FORD VAN LINES
Lincoln, Nebraska

hard. For instance, a Ford four-door sedan with no accessories will cost about $14,650, while a Chevrolet may run to $15,500. Thus, companies such as Ford are considering following IKA's lead and manufacturing cars from mainly local parts.

IKA says it would welcome more competition. And it will get more soon from France's Renault and Citroen and from West Germany's Borgward—if their plans for local manufacturing go through. But even if the surcharge on imported cars were to end, the free-market peso price for imports would still be extremely high. In effect, that puts a wall around local auto makers such as IKA and gives it a virtually protected market.

• **Waiting Lines**—Despite IKA's rigid priority system for feeding Jeeps and cars to its 140 dealers, black-marketing is rampant. Car dealers along Buenos Aires' elegant Avenida Callao openly exhibit IKA cars they have bought from IKA dealers—with a fancy price tag as much as $1,000 above the IKA dealer price. Right now, there is a three- to four-year wait for purchase of a Jeep.

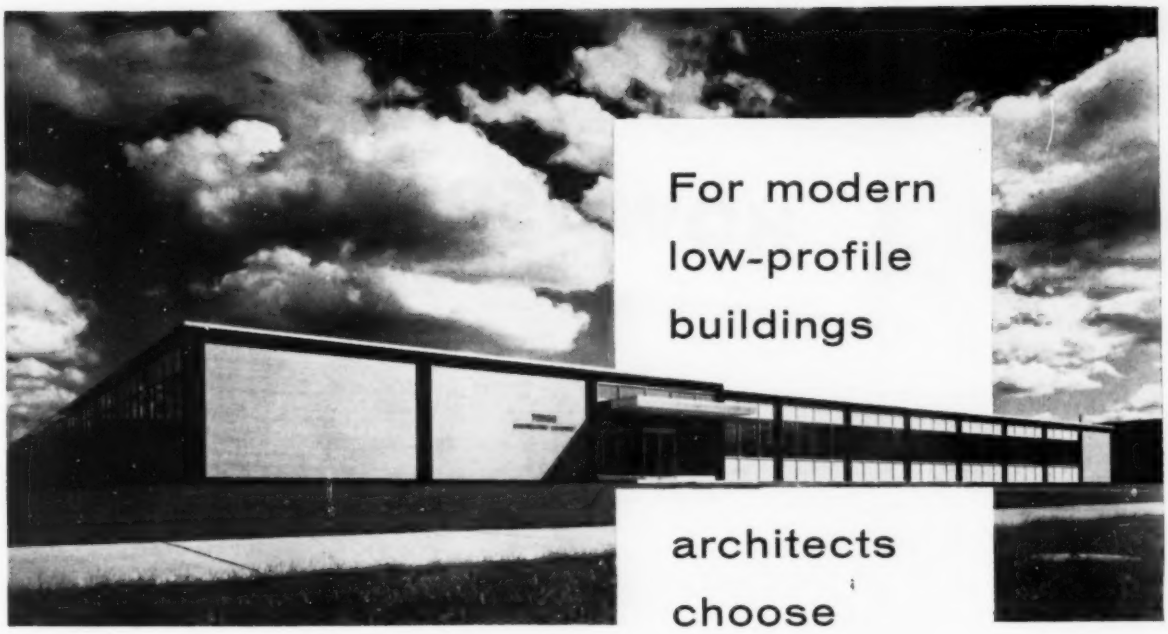
II. Kaiser's Trip South

The IKA venture began in 1954. At that time, Henry J. Kaiser—through his purchase of Willys Motor Corp.—found he had excess plant capacity. He sold part of the equipment at his huge Willow Run plant to General Motors. Then he decided to make a trip to Latin America to try to find a way to utilize the remaining plant capacity.

In Argentina, Kaiser saw a ready market for his products. He also found a friendly political atmosphere. It was just at this time that Dictator Peron was switching his political line from "anti-Yanqui" outcries to a more pro-U.S. policy. Kaiser realized that, to avoid Argentina's currency troubles, he would have to build a plant inside the country. He sent James F. McCloud, then general manager of Kaiser's Detroit engine division, to Buenos Aires to lay the groundwork. In January, 1955, a contract was signed between Kaiser Motors Corp. and DINFIA, the state-owned airplane company at Cordoba.

• **Full Speed**—In Toledo, Kaiser geared up to ship nearly 11,000 tons of machinery and equipment worth $10-million to Argentina. It sent top personnel from the Detroit engine division to Cordoba. In Buenos Aires, Kaiser management set up an office in the posh Plaza Hotel.

Construction of the 861,120-sq.-ft. plant at Cordoba—457 miles west of Buenos Aires—was a crash program. Some 1,200 workmen put up the plant in slightly over a year. Construction involved $5.5-million worth of orders



Rotary® OILDRAULIC® ELEVATORS

Improve building design, reduce construction costs

- Modern oil-hydraulic operation eliminates the need for an expensive, unsightly elevator machinery penthouse and gives your architect greater freedom of design
- Lighter elevator shaft sidewalls save construction costs
- Compact power unit often can be located in space that otherwise would be wasted
- Simpler operating mechanism . . . easily adjusted, inexpensive to maintain
- Complete dependability with lower operating costs
- Nationwide installation and service facilities

ROTARY LIFT COMPANY

Division of Dover Corporation • Memphis, Tenn., Chatham, Ontario

First name in oil-hydraulic passenger and freight elevators—industrial lifting devices—auto lifts.

ABOVE: Rotary Oildraulic Freight Elevator in The Trane Co. Technical Design Center, La Crosse, Wis., exterior of which is shown in top photo.

RIGHT: Rotary Oildraulic Passenger Elevator in Julius Lewis Clothiers, Memphis, Tenn.

MAIL FOR HELPFUL INFORMATION

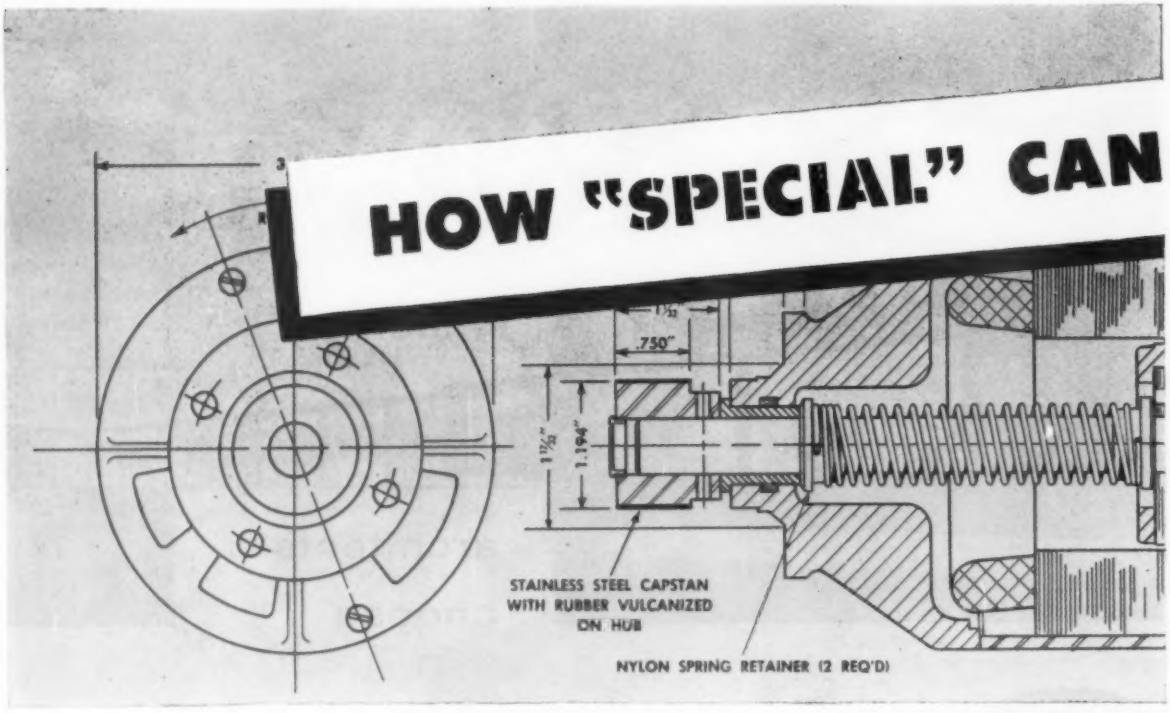
Rotary Lift Co.
1116 Kentucky, Memphis 2, Tenn.

Send information on passenger ☐; freight ☐ elevators to:

Name_____

Address_____

_____



HOW "SPECIAL" CAN

SPECIAL ROBBINS

capstan motors function

SPECIFICATIONS

Reluctance synchronous motor, 1/20 HP, 60 cycle, 3 phase, 208 volts ± 8%, 1200 RPM . . . Rotor dynamically balanced to commercial specifications . . . Shaft is shown in position when motor is stopped . . . When motor is running at synchronous speed, a minimum axial force of 350 grams is required with spring in place before displacement occurs . . . When rotor is in its retracted position and power is applied, the minimum axial force developed with spring in place is 100 grams . . . When power is cut off, the spring retracts the rotor with minimum 50 gram force while rotor is rotating.

Robbins & Myers
builds motors from
1/200 to 200 horsepower

YOU GET?

& MYERS

accomplish unique in IBM'S 727 magnetic tape unit!

SHAFT ROTATES AND MOVES AXIALLY

Two of these special R&M motors are used in each of IBM's 727 Magnetic Tape Units. They answer IBM's need for a tape unit drive motor with a retractable capstan. The rotating shaft moves axially when the motor is started or stopped.

A spring holds the rotor, shaft and capstan in retracted position when the motor is stopped. When started, as the motor attains synchronous speed, axial force created as the rotor centers itself in the field becomes sufficient to overcome spring resistance. The capstan moves into engaged position and sends the tape reels rolling. Another capstan on the opposite end of the shaft (at right in drawing) actuates two microswitches as the rotor returns to retracted position when motor is stopped.

Four additional R&M fractional horsepower motors perform other high-speed power tasks within the tape units —driving reels, rewinding, unloading tape and retracting guide mechanisms.

R&M motors meet strict IBM engineering requirements: precise adaptability to special functions, capacity for lightning starts and stops, and absolute dependability. R&M can also design and build motors of highest quality designed to your exact specifications. For reliable fractional power, contact Robbins & Myers!

R&M

ROBBINS & MYERS, INC.

SPRINGFIELD, OHIO / BRANTFORD, ONTARIO

MOTORS FANS HOISTS MOYNO PUMPS PROPELLAIR FANS

Blended of the finest pulps, genuinely watermarked, and moisture-proof wrapped, Hamilton Bond is one of America's finest papers. Let your printer help you make Hamilton Bond contribute to the efficiency and prestige of *your* business. Your work is as good as your bond—and Hamilton Bond brings out the best in your work!

SOLD BY LEADING PAPER MERCHANTS EVERYWHERE

HAMILTON PAPERS

Hamilton Paper Company, Miquon, Pa.

Mills at Miquon, Pa., and Plainwell, Mich.
Offices in New York, Chicago, Los Angeles

Cooler gloves are aid to safety

When warm Spring days come, employees tend to become "careless" about wearing work gloves. The nuisance hand injuries that result are costly. To combat this problem, many plants supply or make available lighter, cooler, *palm-coated* gloves for operations where palm-coating gives ample protection. The fabric backs provide welcome ventilation while the palm coatings, of rubber, plastic or Neox neoprene, protect from cuts and abrasion. They so far outwear ordinary canvas or leather palms that cost savings are often astonishing.

Free Test Offer to Employers: Edmont makes a dozen types of palm-coated gloves with different wear and gripping characteristics to fit different jobs. Tell us your operation. Without cost we will recommend correct gloves and supply samples for comparison testing on-the-job.

Edmont Manufacturing Company, 1220 Walnut Street, Coshocton, Ohio.

Edmont
JOB-FITTED GLOVES

for local parts and supplies and around 50 major contracts placed with 37 local contractors.

III. Troubled Air

On Apr. 27, 1956, the plant turned out its first Jeep. At the cocktail preview, before actual sales, several Argentine officials thought the Jeep was "Yanqui" propaganda—and no more.

That's not the only trouble IKA has faced:

• IKA got caught in Argentina's bloody revolution against Peron. In the bombing raid aimed at toppling Peron's government on June 15, 1955, Graham Tune, IKA's chief industrial engineer, was killed. The following September, during the successful revolution, plant construction at Cordoba stopped because of street fighting.

• Following Peron's downfall, IKA—still not in production—was put on the black list. The provisional government assigned "interventors" to investigate and watch over the company's finances. IKA claims that while on the black list, it lost about $1-million.

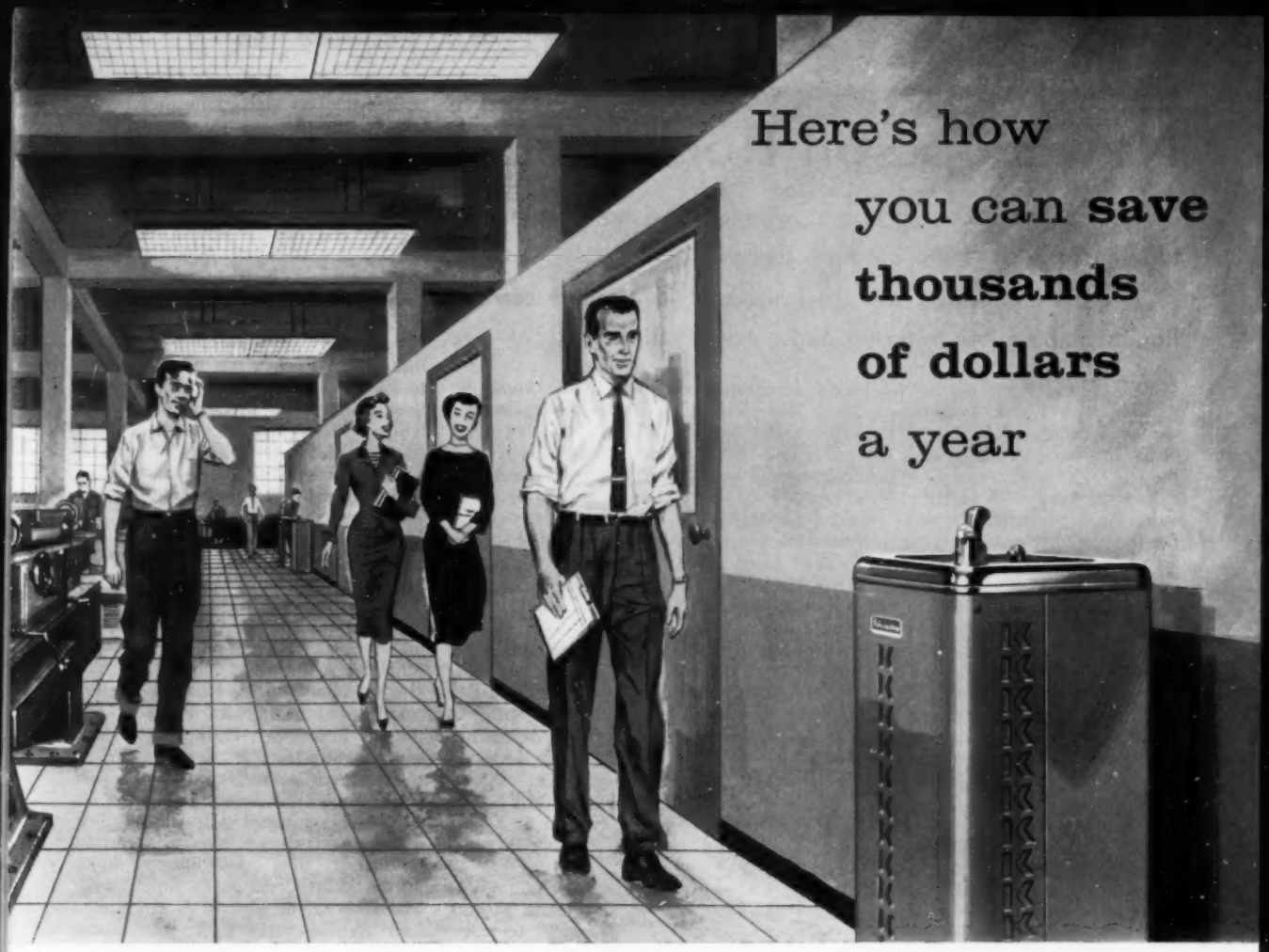
• IKA was the first of 72 foreign companies to be taken off the black list. But, meanwhile, it had to agree to revamp its old contract with Peron and invest more money in its Argentinian operations. Also, it had to reshuffle its board of directors, so that seven—instead of only three—are Argentinians.

• IKA has had a long series of production headaches. At first, some 60% of the auto parts from its 750 local suppliers failed to meet specifications. Now the rejection rate is down to 20%. In addition, the Cordoba plant has been hit by strikes.

• **Honeymoon at Last**—Today, operating under a new contract with the Argentine government, IKA is beginning to prosper. Since January, 1957, it has been operating in the black. Over the past fiscal year, ending this June, it has made sales of around $45-million, with profits of around $3.5-million. That compares with around $16-million in sales and $500,000 in profits for the fiscal year ending in June, 1957. Though its plant is producing only 94 units a day, it will probably be 154 by December—which is close to capacity.

With subscribed capital of around $12-million and some 2,300 employees, IKA rates among Argentina's Big 10. In terms of capital, its only peers are YPF, the state oil monopoly; Alpargatas, which makes textiles; and Acindar, a steel company.

IKA is primarily Argentinian in its financial backing. Kaiser Industries, through Willys Motor Corp., the holding company, owns some 35% of the stock. The rest is split up between DINFIA (19%) and private Argentina stockholders (46%). END



Here's how you can **save thousands of dollars** a year

Free Kelvinator book gives you all the facts

How many of your workers walk 54 miles a year to and from the water cooler? Sure, they need plenty of refreshing, cool water. It increases their productivity, helps morale . . . especially on hot, hot days. With the facts in this fast-moving book, you may be able to cut lost time in half. And here's another big saving.

There's more for your money in Kelvinator water coolers. They last longer, are more dependable. Matter of fact, they have a 5-year Warranty on materials and workmanship.

An outstanding feature is the fabulous Kelvinator bubbler that's built with the precision of a fine watch. Or the new Pre-Cooler and Capacity Booster that double the amount of available cold water. The whole story of the sensational Kelvinator features is spread before you in this illustrated book.

In it, too, you'll find charts that help you select the right water cooler for your needs.

Send the coupon now for this new book with its cost-cutting, production-increasing ideas.

This bottle type Kelvinator water cooler has refrigerated compartment, with two ice cube trays.

Kelvinator AMERICAN MOTORS CORPORATION

WATER COOLERS

and standard coolers in pressure and bottle models
Sold coast to coast . . . rented in many cities

DISTRIBUTED IN CANADA BY KELVINATOR OF CANADA, LTD.

KELVINATOR WATER COOLERS
Dept. 55, Columbus 13, Ohio

Send me the new FREE book, "Something New Has Been Added to Water Coolers."

name_____

title_____

company_____

address_____

city_____ zone____ state____

RESEARCH

New Hope on Rocket Fuel

● Prepackaged liquids, with fuel and oxydizer mixed together, could solve countdown delays.

● Enthusiasts say they already equal most current liquid combinations in thrust, and outclass solids.

Talk of pushbutton warfare has been drawing some hollow laughs from laymen and professionals alike. The idea of instantaneous destruction sits ill with the day-long countdowns—laborious, accident spattered, and widely publicized—that lie between the decision to fire the best of our present missiles and the actual button pushing that starts them on their sometimes wobbly way.

The laughter isn't wholly fair, of course. The missiles fired up to now have been experimental, groping, even jury-rigged. But the fact remains the Air Force's most optimistic estimate for the ICBM Titan—the hottest thing now nearing readiness—is for a two-hour countdown under ideal conditions, using existing fuels. Two hours is something less than instantaneous.

• **Complications**—Existing fuels are one key to the slowness. The long range missiles tested so far have all used liquid fuels, the so-called bipropellants. The "bi" simply means that the missile has to carry, separately, both the fuel and the oxidizing agent that makes combustion possible. The problems of this duality, and of the vastly complicated machinery needed to bring the two substances together, have caused a lot of the countdown anguish. So much so that the experts have begun to wonder whether they would have to shift to solid fuels, which provide less thrust than the liquids and are harder to control precisely but are simpler and much faster to fire (BW—Feb.22'58,p44).

Right now, though, it's beginning to look as though the missile people may escape this disagreeable choice, thanks to a new entry: prepackaged liquid monopropellants. Work is being rushed on these high energy fuels; some are already available in sufficient quantity for testing. And the list of their advantages is long:

Easier to handle. With prepackaged liquid fuel, a missile could be charged as soon as it was put on the firing pad. From then on, letting it fly would be truly a pushbutton matter. Gone would be the long hours of the countdown, during which time immensely volatile fuels are pumped into the missile. Gone, too, would be the elaborate dual sets of tanks and pumps that bring the fuel and the oxydizer together in the combustion chamber. Gone would be the intricate cooling-warming system that today's liquid-fueled missiles must have. All that the prepackaged fuel would need is a simple mechanical device to start it flowing from its container and a pressurizing gas to keep it flowing into the combustion chamber.

More power. In "specific impulse"—pounds of thrust per pound of fuel per second—the prepackaged liquid fuels promise a 20% advantage over the average of the liquid bipropellants used today. Indeed, their specific impulse compares favorably with some of the highest theoretical—but not practicable—performance of liquid bipropellants. They quite outclass present solid fuels, which, despite recent great strides (BW—Jan.25'58,p32), are still relatively weak and which burn at a rate that cannot be controlled once they are ignited.

Ease of manufacture. Any liquid propellant is easier to make than a solid fuel. The solids are as tricky to make as explosives, with the same tendency to blow up at many stages in the process. The tiniest lapse from specified procedure could eventually mean that the fuel would destroy instead of propelling its missile. With liquid monopropellants, it is nowhere as hard to do the compounding, once you have matched up an oxidizer and a fuel that can live together compatibly in a single temperature range.

Flexibility of launching sites. Launching pads themselves are simple to set up, but today's bipropellant missiles are tightly tied to the apron strings of fixed bases with elaborate equipment for fueling and for underground storage of menacing fuels. Attempts to work out portable fueling systems have been less than satisfactory, in terms of wartime. A few bombs could put our long-range missilemen out of business. Monopropellant rockets would offer a very considerable solution of this peril, for it would be comparatively easy to rush prepackaged fuels to hastily set up launching pads.

• **Navy Rocket**—Up to the present, no monopropellant missile has reached the operational stage, though the Navy's LAR, a 5-in. artillery rocket, got as far as a prototype. The LAR was designed for relatively low energy fuel, yet it needed the very high combustion chamber pressure of 1,700 psi. So finally, it proved simpler to get the same thrust at the same weight using bipropellants.

With that meager background, a scattering of companies are now working for the Navy's Bureau of Aeronautics to develop a monopropellant that combines high specific impulse with reasonable pressure requirements.

• **Fuel X**—One of these companies, Wyandotte Chemicals Corp., says one form of its Fuel X has pressure down to 500 psi., and that even without additives it offers no problems of storage temperature. It has one catch: a tendency to detonate, which Wyandotte hopes to cure by additives and changes in design of the missile's hardware.

BuAir contracts for work on prepackaged monopropellants have also gone to Stauffer Chemical Co., Food Machinery & Chemical Corp., and the Naval Air Rocket Test Center. The Navy's Bureau of Ordnance has Experiment, Inc. of Richmond, Va., looking into the field, while Aerojet-General, Hughes Tool Co., and Reaction Motors have projects with Naval Research. On the Air Force side, Phillips Petroleum and the Sunstrand Turbo Div. are in the field, while the Jet Propulsion Lab is doing work for Army Ordnance.

Not all companies with experience in monopropellants are equally enthusiastic about their possibilities. Some on the West Coast are definitely cool. The Rocketdyne Div. of North American Aviation still feels that liquid monopropellants will never be competitive with the liquid bipropellants, though they may catch up with solid fuels. Reservations are also expressed by Aerojet-General and Jet Propulsion Lab, and, of course, the solid fuel rooters claim that their horse is going to finish first.

• **Parallel Development**—One thing is admitted by all sides: No super liquid monopropellant will appear overnight, and none for the time being is going to shift the main current of U.S. missile development. For one thing, new designs of missile engines would be needed to handle the monopropellants; the Western World has had no experience at all in designing such engines. Now Wyandotte is experimenting with propulsion units along with its fuel work. And it's reported that other companies have similar projects going.

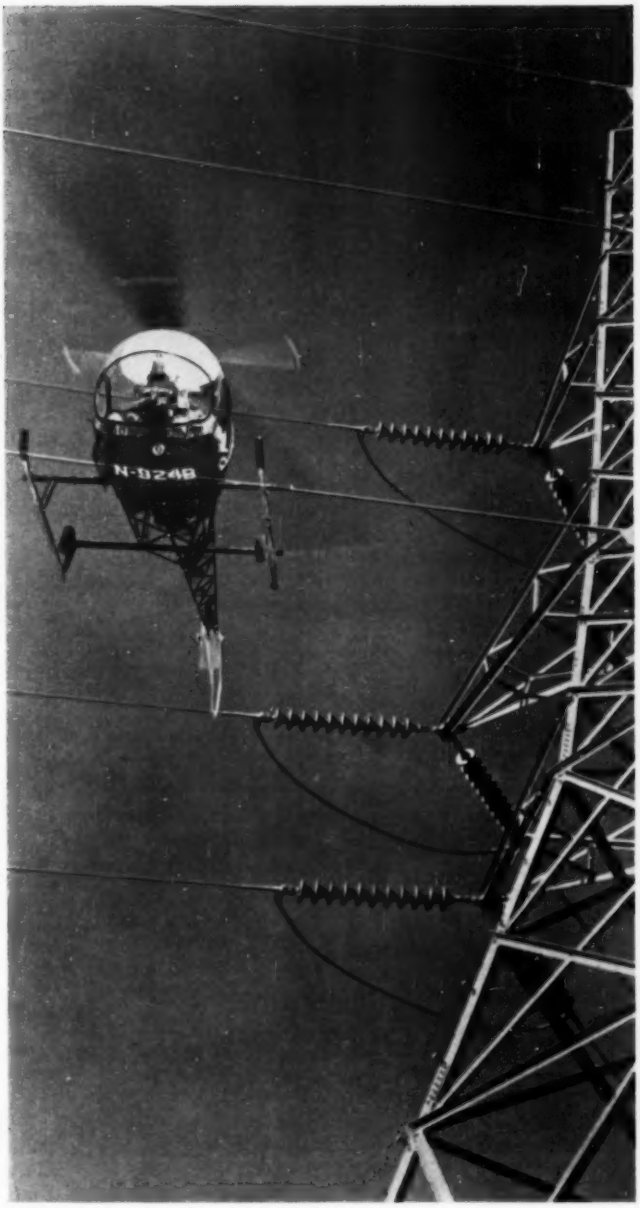
With any company pushing parallel work on fuels and engines, the progress is likely to be slow. The situation has its advantages, though. Rocket and fuel are likely to reach full development pretty much together. Some people think it may even pan out in time to take over from solid fuels in the 5,000-mi. Minuteman rocket (BW—Mar.29'58,p36). END

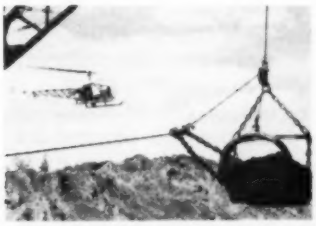
How much could a Bell Helicopter save your company?

Simple problem in arithmetic: you have 440 line-miles to patrol and it takes two men *37 man-days* to make a ground patrol. Aerial patrol by Bell helicopter takes *14 flight hours* for the same job. How much does the Bell save in money, men and time? One utility company, with this exact problem, found the answer to be: $200 saved on every patrol; two trained linemen released for other duties almost 100% of the time; hundreds of hours saved.

There are countless jobs a Bell can do — construction men, oil operators, manufacturers — businessmen in many categories are finding this out every day. How about you? Would a savings in time and expense be welcome to your company? Then let us tell you more about the Bell — explain the three convenient ways you can use it — by Charter Service, Bell's own Lease/Purchase Plan, or Outright Purchase. Write Dept. 11F, Bell Helicopter Corp., Fort Worth, Texas.

Watch "WHIRLYBIRDS" on TV . . .
consult your local paper for time and station





BELL Helicopter CORPORATION

Subsidiary of Bell Aircraft Corporation

Fort Worth, Texas

In Research

• • •

Stanford University Hospital Sets Up Three-Dimension X-Rays of Heart

Stanford Medical School radiologists can now make X-ray motion pictures of the heart in three dimensions. The most elaborate apparatus of its kind has just been installed in Stanford University Hospital at a cost of about $100,000.

For years, medical men have been seeking a way to study a patient's cardiac motion and blood flow simultaneously in two planes. Conventional equipment, for example, revealed only the height and width of the patient's heart chamber. **The new setup tells the doctor also its depth,** an essential dimension if the heart's motion and the volume of blood are to be completely studied.

The new equipment, also being tested on animals at European medical centers, uses two 11-in. "image intensifiers" mounted at right angles to each other, one beneath the patient and one aimed horizontally from the side. Like ordinary fluoroscopes, these electronic intensifiers form the X-ray picture on their circular 11-in. screens.

They also produce an image 100 times as bright as that of the conventional fluoroscope. **This means the patient gets less X-ray exposure per minute, and the study of his heart can be continued longer before a safe limit is reached.** Studies are usually performed with a catheter, or plastic tube, inserted in the heart through a vein. When an opaque substance is squirted into the heart through this tube, cameras record its movement through the heart, lungs, and major blood vessels.

• • •

Auto Engineers Hear About Snags In Engine and Fuel Development

How much higher can, or should, auto engine compression ratios rise? How will the chemical composition of fuels have to be changed as this rise takes place?

General Motors Corp. engineers suggested answers to these questions at this month's meeting of the Society of Automotive Engineers in Atlantic City.

Today's engine design can be boosted profitably to about a 17-to-1 compression ratio, Darl F. Caris and Edwin E. Nelson of the GM engineering staff told the group. That's if the petroleum industry can economically provide the fuels for such engines.

GM experimented with seven modified V-8 production engines ranging from 9-to-1 up to 25-to-1 compression ratio. Researchers found that at about 17-to-1, a conventional auto engine is at the peak of its thermal efficiency; after that, a sluggishness in combustion tends to cut efficiency.

No rise at all in engine compression ratios is possible without "rumble—a low-pitched thudding noise that is different from knock but also associated with combustion," said Warren M. Wiese of GM's research staff. One way to prevent this effect, he said, is to change the aromatic (benzene) content of gasoline and to use certain phosphorous additives.

The additives would help to control ignition, apparently by modifying deposits in the combustion chamber.

• • •

From Sputnik II, Russians Learn As U. S. Did About Earth's Magnetism

Findings of Russian scientists from Sputnik II data, reported in Pravda, agree in almost all respects with U. S. discoveries (through study of cosmic rays) concerning the deviation of the earth's true geomagnetic equator from the position that had long been accepted.

U. S. measurement of this discrepancy began in 1954, when a neutron-pile detector was installed aboard the U.S.S. Atka for a trip around the Equator.

Reaffirmation of the U. S. findings by the Russian reports explains a phenomenon that has puzzled physicists for many years. Cosmic rays from outer space have long been known to be affected by the magnetic field that shields the earth—but not as they should have been, according to all known descriptions of that magnetic field as it exists at low altitudes.

The explanation: The earth's outer magnetic field is twisted approximately 45 degrees westward from the magnetic field at or near the earth's surface. Why this is true is still open to speculation. But one immediate implication is important: The ionosphere, the blanket of atmosphere just outside the earth's own atmosphere, cannot be where it was thought to be but must be centered in the newly found outer magnetic field.

• • •

Utilities Join General Dynamics To Seek Economical Power Reactor

Eight Rocky Mountain and West Coast utility companies last week joined the General Atomic Div. of General Dynamics Corp. in research on nuclear power that will be competitive in cost with electricity from conventional fuels. The group, known as the Rocky Mountain-Pacific Nuclear Research Group, will put up more than $500,000 in the next two years for their joint research effort.

The goal is to develop reactors capable of producing the high temperatures and steam pressures required for greatest efficiency in modern power plant operation. **Gas-cooled reactors seem to be the simplest and least expensive answer,** and the group will first stress research on this type of reactor.

However, researchers won't neglect theoretical studies of the possibility of generating electricity directly from fission heat or of finding new thermoelectric materials that are particularly adapted to withstanding the high radiation found in power reactors.

The research will be carried out at General Atomic's John Jay Hopkins Laboratory of Pure & Applied Science in San Diego, Calif.

TAMPA, FLORIDA—a key city in one of our fastest-growing states, Tampa's population has increased 42.3%, its building permits, on valuation basis, 205.3% and its telephones 83%—in just the past 7 years. Tampa is in General Telephone Territory.

Areas that are "growing places"

helped build America's second largest telephone system

Bulldozers clanking, power shovels gulping huge bites of earth, hammers thudding nails home—that's the music you hear in suburban areas all over the land.

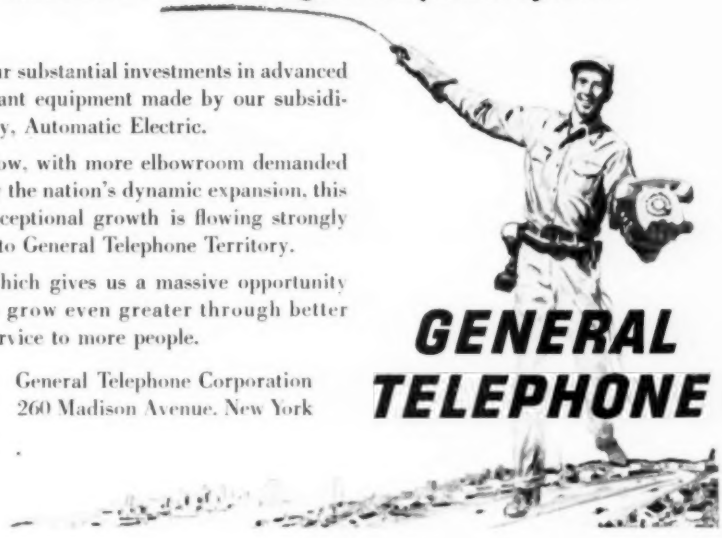
And in these places of fastest growth, General Telephone already is operating 3,359,000 telephones—and adding to them at a rate of 1,000 more every working day.

Served by 1,745 central offices in 30 states, over 85% of our telephones are of the modern dial type. And our confidence in the future is responsible for our substantial investments in advanced plant equipment made by our subsidiary, Automatic Electric.

Now, with more elbowroom demanded by the nation's dynamic expansion, this exceptional growth is flowing strongly into General Telephone Territory.

Which gives us a massive opportunity to grow even greater through better service to more people.

General Telephone Corporation
260 Madison Avenue, New York



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INTERNATIONAL OUTLOOK

BUSINESS WEEK

JUNE 21, 1958

The Communist world is in a state of political turmoil that may seriously upset East-West relations.

One storm signal is the unprecedented blast by Yugoslavia's Marshal Tito against Communist China. Another is the execution of Hungary's rebel premier Imre Nagy. There may be further trouble ahead from the sudden meeting of the Soviet Central Committee in Moscow.

The internal Communist crisis is worrying the West. It may lead to a switch in Premier Khrushchev's policies from a "peaceful" offensive against the West to Stalin-type tactics. And the first victims of this shift may be the proposed summit conference and atomic arms control.

Tito expects a complete break with the Communist bloc. He has accused Peking of being prepared to sacrifice half the Chinese nation to conquer Asia. His bitter attack goes far beyond the worst days of his earlier split in 1948-49 with Stalin. And he evidently anticipates tough moves by Khrushchev to attempt to bring him into line.

As a countermeasure, Tito is trying to stir up trouble within Khrushchev's own camp. He is playing up to groups within the Red army and Soviet industrial bureaucracy that fear Communist China's growing strength.

Tito also is appealing to such neutral Asian countries as India and Burma, which have accepted Soviet economic aid and are coping internally with Communist forces. Thus, Tito hopes to weaken Khrushchev's position by undercutting him in Asia.

Washington and other Western capitals are trying to see behind the Kremlin's shifting tactics.

They discount the idea that Peking provoked a Moscow-Belgrade rift in order to get Soviet economic aid now going to Yugoslavia. But Western diplomats think there may be pressure from Peking for Moscow to test U. S. strength in Asia and the Middle East.

There is little evidence that the new political ferment in the Communist bloc stems from a power struggle inside the Kremlin. **In fact, Khrushchev appears stronger than ever.** The execution of Nagy is apparently a go-slow warning to Moscow's East European satellites, especially Poland.

—•—

Khrushchev may divert attention from troubles in the Soviet camp by a tougher policy toward the West. The Lebanese crisis may be the testing ground for this strategy.

It seems clear that Moscow ordered the uprising—not Cairo. The Soviets used Moscow-controlled forces in Syria to push the rebellion. That's the same technique employed last year to start an uprising in Jordan.

In both cases, Pres. Nasser apparently had no advance word of Moscow's plans. But there's a big difference in the Lebanese crisis: Syria is now a part of Nasser's United Arab Republic. Thus, he has a big stake in the outcome of Soviet efforts to use Syria as a base for Communist rebel activity in Lebanon.

In Lebanon itself, Nasser has reached a point of no return. A victory for the pro-Western government of Pres. Chamoun would be a disastrous blow to Nasser's prestige in the Middle East.

Washington has no choice, either. It is committed to defending Chamoun's government. Beyond that, Iraq's Premier Nuri Al-Said has warned that a rebel takeover in Lebanon would scuttle the Baghdad Pact. More important, a rebel victory would be interpreted as a major decline of U. S. influence in the Middle East.

At midweek, none of the parties in the conflict seemed to want a military showdown—least of all, Washington.

Washington was banking on avoiding military intervention. That's mainly because the Lebanese army is believed capable of suppressing the rebellion—if willing to use its full power.

Washington still hopes that U. N. Secy. Hammarskjold will bring a compromise. And Cairo may feel the same way. But few observers, here and in Lebanon, believe that Hammarskjold can salvage the situation.

If the U. S. should intervene militarily, it would probably create a Middle East crisis as critical as the Suez explosion of 1956.

—•—

The de Gaulle government, after an initial phase of maneuvering, is now moving over to the offensive. If the General does as well in the weeks ahead as during his first three weeks, his position should be pretty solid. His record so far looks fairly impressive—though the Algerian problem still looms large.

On Tuesday, de Gaulle's Finance Minister, Antoine Pinay, launched the government's first loan. It was billed as a test of the nation's confidence in de Gaulle. The loan contains attractive investment opportunities—it's tied to the price of gold as a hedge against inflation.

Pinay's gold loan (he launched a similar one as premier in 1952) has a twofold aim. First, it is supposed to sop up the excess purchasing power and lighten the load on the domestic budget. Second, it is meant to attract gold and foreign currency into the government's depleted reserves.

At midweek it was clear that the loan would be successful on the first count. But it's too soon to tell if it will help reserves. And a failure there would force Paris to slap on drastic import curbs.

On Tuesday, de Gaulle's cabinet agreed to withdraw most French troops from Tunisia, though not to leave the French naval base at Bizerte. Ironically, this agreement is much the same as that proposed last winter by the Anglo-American "good offices" team. And it was Premier Gaillard's acceptance of the same formula that brought his downfall—opening the way for de Gaulle.

Even so, de Gaulle faces a showdown with the French settlers in Algeria. So far, he hasn't really neutralized their organized opposition to any liberal settlement of the Algerian war. Maybe de Gaulle can manage this during his July 2 trip to Algeria.

Even the loyalty of the army brass in Algeria isn't completely assured —though Washington still is betting that de Gaulle can keep the army behind him. That's partly because he is encouraging them to put more military pressure on the rebels.

Meanwhile, the rebels are taking a tough line toward de Gaulle. But this may be only a bargaining position. If de Gaulle is able to pull the French settlers in Algeria into line, then come up with a reasonable settlement offer, the rebels probably would be forced to negotiate.

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A REPORT TO MANAGEMENT ON HOW

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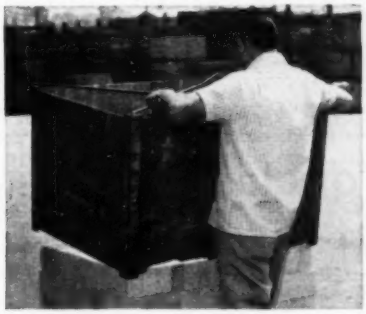
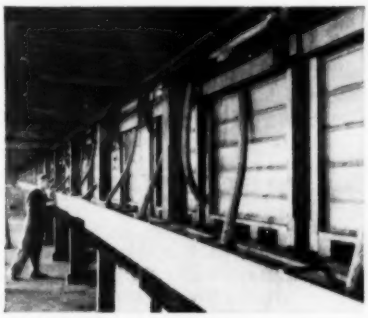
Fir plywood pallets give extra capacity, last longer and save 9 lbs. per unit at Heidelberg Brewing Co. The firm has used over 5,200 since 1952; it reports plywood has eliminated pallet failure. Repair costs are negligible. Write for DFPA report on design and use of plywood in pallet construction.



Switch from aluminum to fir plywood for these "bottomless boxes" saves $5,000 per year in maintenance and replacement costs for Keeney Truck Lines, Los Angeles. Collapsible boxes have sides, no bottom. They slip over palletized bricks to hold them securely in position during handling, shipping.



Over $30,000 savings in four years was made by switching to overlaid fir plywood for these electro-plating cells. The plywood acid tanks cost only $140 each—$400 to $600 less than rubber-lined steel tanks. Plywood also solved leakage problem which has been encountered with the lumber tanks.

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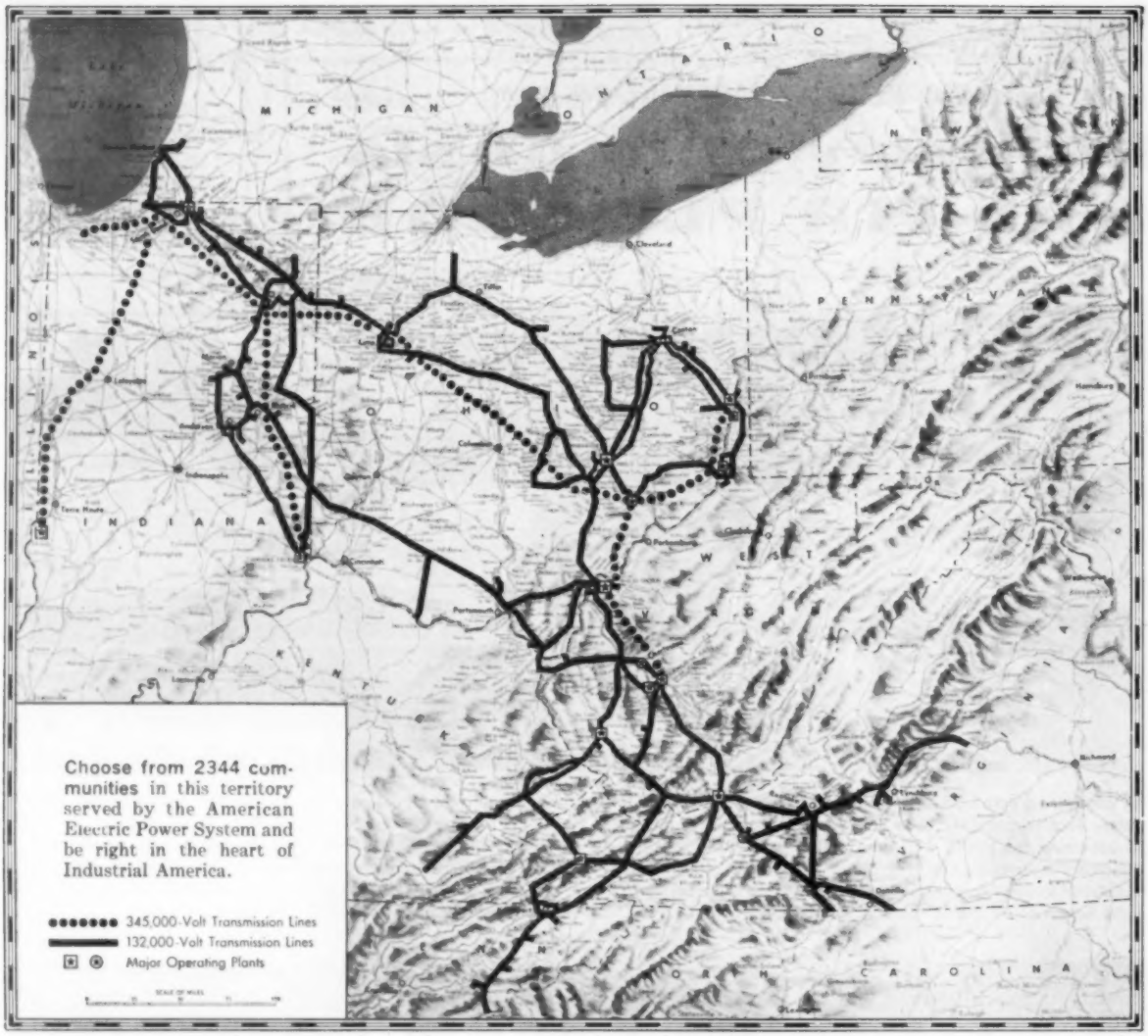
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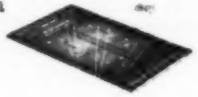

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LABOR

Too Many Deals With Outcasts

● **That's a problem facing AFL-CIO council in August.**

● **At least 10 unions work openly with ousted Teamsters, and now NMU's Curran flirts with both Teamsters and ousted Longshoremen in Great Lakes organizing feud.**

● **Top AFL-CIO body must decide whether to enforce ban on pacts with outcasts—but no drastic step is likely.**

The executive council of AFL-CIO will face a critical problem at its next meeting this August. Despite the federation's stand against collaboration between its affiliates and expelled unions, at least 10 AFL-CIO unions are working openly with the International Brotherhood of Teamsters.

The question the council faces is: What's to be done about it?

• **NMU the Latest**—Last week, Joseph Curran of the National Maritime Union gave the problem added emphasis by meeting in Washington with representatives of the IBT and the International Longshoremen's Assn., both AFL-CIO outcasts. Curran, a member of the federation Ethical Practices Committee, made no secret of what he was doing. What led him to flirt with the outcasts was this:

Labor activity is being stepped up in Great Lakes ports in preparation for the opening of the St. Lawrence Seaway in 1959. The big increase in jobs for dock workers, warehousemen, and merchant seamen means intensified organizing and hotter union rivalries.

AFL-CIO's Maritime Trades Dept. (to which NMU does not belong) is coordinating a campaign to organize new workers into its affiliated unions—notably the International Brotherhood of Longshoremen, set up as a rival of the ousted ILA. The latter had jurisdiction in the Lakes ports before its expulsion in 1953, lost it then to the IBL. Now, the ILA is pressing strongly to win back the docks as they take on much greater importance.

• **Teamsters' Aid**—The big Teamsters' union, powerful throughout the Midwest—the stronghold of its president, James R. Hoffa—is backing ILA in the Lakes organizing contest. It has a choice plum to pick for itself, too—the warehousing and trucking workers.

The Teamsters and ILA have been getting closer nationally; officers of the ousted unions say it's not because of their status outside AFL-CIO but because of the close working relationship of longshoremen, warehousemen, and truckers on the nation's docks. For this reason, IBT this week reached a mutual-aid agreement with the International Longshoremen's & Warehousemen's Union of the West Coast.

Worried about the power of the Teamsters in support of ILA in the Great Lakes area, AFL-CIO's Maritime Trades Dept. moved in months ago to reinforce the small and vulnerable IBL. It has allotted manpower, leadership, and most important, money, to strengthen the federation in the area.

That's what brought Joe Curran and the NMU into the picture.

• **NMU vs. SIU**—Perhaps the greatest strain in internal relationships among AFL-CIO unions is to be found in those between NMU, formerly in CIO, and the Seafarers' International Union, an old AFL group. A feud between the rival seamen's unions has been getting hotter, month by month. Bitter charges are exchanged regularly. Jurisdictional struggles haven't quieted a bit since pre-merger days.

In the first flush of fellowship in the merger period, both SIU and NMU were members of the AFL-CIO's Maritime Trades Dept. Later, in the heat of an inter-union argument, NMU withdrew. It's been operating on the outside of the MTD since then. And, from time to time, it has charged that AFL-CIO and particularly Pres. George Meany are partial to SIU, ignore "valid" NMU complaints.

Recently, NMU has been openly critical of AFL-CIO and Meany for what the Curran union considers to be a failure to act against an SIU breach of federation ethical practices. Earlier this year, the Seafarers lent the American Banner Line $750,000 to assist its transatlantic passenger service. Several weeks ago, the company hired seamen for a liner, and NMU protested that the line was favoring SIU men as a quid pro quo for the union loan. Both the line and SIU denied favoritism was being shown, or that the loan was a factor of any kind in the hiring hall.

• **Protest to Meany**—NMU protested to Meany. Spokesmen say nothing has been heard from the federation president or from anyone in AFL-CIO.

To NMU, this is just another grievance against the federation. Although nobody talks of a break with AFL-CIO, it's no secret that the maritime union leaders are unhappy about the way things are shaping up for NMU inside the national labor body. They're inclined to blame two things:

• The "domination" of the Maritime Trades Dept. by the SIU, headed by Paul Hall, and the strong support given to the MTD by the traditionalists in AFL-CIO—mostly the craft unions.

• Personal animosity between Meany and Curran, based on many incidents but as much as anything on Curran's support for a return of ILA to the House of Labor when the issue last came up.

The late Philip Murray once described Curran affectionately as a man equally able to swing heavy fists in a picket line brawl, or to "lift his little finger just so" when at tea with an employer. Certainly, there is no such affection between Meany and Curran. Their relationship is more that of the heavy fist than the little finger raised just so.

• **NMU's Move**—Probably, this would never be a factor in organizing seamen on the Great Lakes. But, the wariness and resentment felt against Meany and AFL-CIO are considerations in NMU policies as these were reflected in the meeting last week with Teamsters and ILA representatives.

According to Curran, the meeting was routine. It has always been his policy—and will continue to be his policy—to "meet and work with other waterfront groups on mutual problems," he explained. He was invited to do so on the occasion of an ILA executive board meeting. The talk there was "cordial" but "nothing formal" resulted from it, nor was expected to. However, another conference reportedly was set for July 9, in Montreal—to be attended, as the Washington meeting was, by Curran; Thomas Flynn, head of the Eastern Conference of Teamsters; and Capt. William V. Bradley, president of ILA.

Earlier this year, representatives of the Maritime Trades Dept. met with ILA and Teamsters conferees on the Great Lakes situation. Afterward, Meany blasted the meeting as against federation policy on ties with banished groups. Suggestions of a working alliance were repudiated by MTD.

Curran's conference with ILA and Teamsters representatives was held with a full awareness of the position Meany took after the MTD meeting with the same unions. There were no official

"... what's going to happen if there is a showdown, forced perhaps by NMU cooperation in a Teamsters-ILA campaign against AFL-CIO on the Great Lakes? ..."

TOO MANY DEALS starts on p. 127

comments from AFL-CIO. Unofficially, there were worried remarks such as one that "Curran is inviting a showdown with Meany and the executive council."

• **Not Alone**—If there's to be one on the issue of relations with outcast unions, Curran and NMU won't be alone. Seven AFL-CIO unions have firm pacts with the Teamsters—most of them signed-and-sealed agreements for mutual aid and cooperation, formal pacts that go far beyond anything NMU is committed to so far.

The 1.4-million-member IBT, expelled from AFL-CIO last Dec. 6, has what it terms "successful mutual aid agreements" with:

The International Assn. of Machinists, whose president, Albert J. Hayes, is head of the AFL-CIO Ethical Practices Committee; the Amalgamated Meat Cutters & Butcher Workmen; the Upholsterers' International Union; the Brotherhood of Carpenters; the Hod Carriers', Building & Common Laborers' Union; the International Union of Operating Engineers, and, most recently, the Office Employees' International Union, in an alliance for joint organizing among white-collarites.

Altogether, these seven unions represent about 2.9-million of AFL-CIO's present membership of, roughly, 13-million. They include some of the unions considered "cleanest" in the federation, such as the Machinists, Upholsterers, and Office Employees, and some—the Meat Cutters, Carpenters, Laborers, and Operating Engineers—that are involved in Congressional or labor investigations of charges of ethical practice code violations.

In addition to the seven firm alliances, the Retail Clerks' International Assn. and the United Brewery Workers appear to be heading toward agreements with the Teamsters that would settle old differences, add two more alliances (covering 365,000 unionists) to the seven already creating headaches for AFL-CIO. And, now, NMU is moving in the direction of a possible alliance with not one but two banished unions—the IBT and ILA.

If these three unions, now showing signs of friendship, sign pacts with the Teamsters, Hoffa's IBT will have working alliances with unions representing fully one-fourth of AFL-CIO numerical strength.

• **What to Do?**—This raises the critical policy question of whether the federation should try to enforce its edict against pacts with expelled unions.

There seems to be no argument about the intent of present policy. The AFL-CIO constitution states flatly that affiliates are not to have ties with expelled unions—and the Teamsters have been expelled.

As one key council member put it, this is "drawing the line pretty thin as to whether the AFL-CIO [can] dictate what friends a union can have." But, since it is policy, he said, unions hitched to the Teamsters through mutual aid pacts will probably be directed to cut the ties. On the other hand, George M. Harrison, an AFL-CIO vice-president active in the clean-unionism fight, said that while he opposes pacts with expelled unions, the agreements "must in many cases be retained as a practical matter."

A number of the unions indicate that they won't be in a hurry to end pacts—if they ever do it. Howard Coughlin, head of the Office Workers, said his union would be guided by the actions of other AFL-CIO unions—among them the IAM. That union renewed its pact with the Teamsters after the Teamsters were expelled, Coughlin noted, even though IAM Pres. Hayes is chairman of the Ethical Practices Committee.

IAM and other unions "will have to abrogate their pacts before we will," Coughlin said.

Vincent F. Morreale, general counsel for the Hod Carriers, added that his union's mutual-assistance pact with the Teamsters "inures to the benefit of those working in the industry—and that's our main concern."

• **Showdown?**—What's going to happen if there is a showdown, forced perhaps by NMU cooperation in a Teamsters-ILA campaign against AFL-CIO on the Great Lakes?

Probably nothing tougher than further orders against alliances, backed by Meany pressure on Hayes and IAM to set a precedent by canceling their Teamsters agreements. Nobody looks for ousters or serious threats of ousters.

Meany is on record for "a small and clean federation, no matter how small it has to be" to rid itself of corrupt influences. However, other policymakers in AFL-CIO, including Harrison, say that the federation cannot and should not expel affiliates for refusing to sever ties with the Teamsters or other banished unions.

"We couldn't get away with that," Harrison said glumly last week, in acknowledging "we have another big problem to face." **END**

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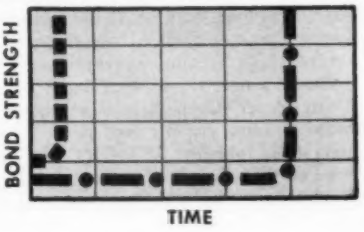

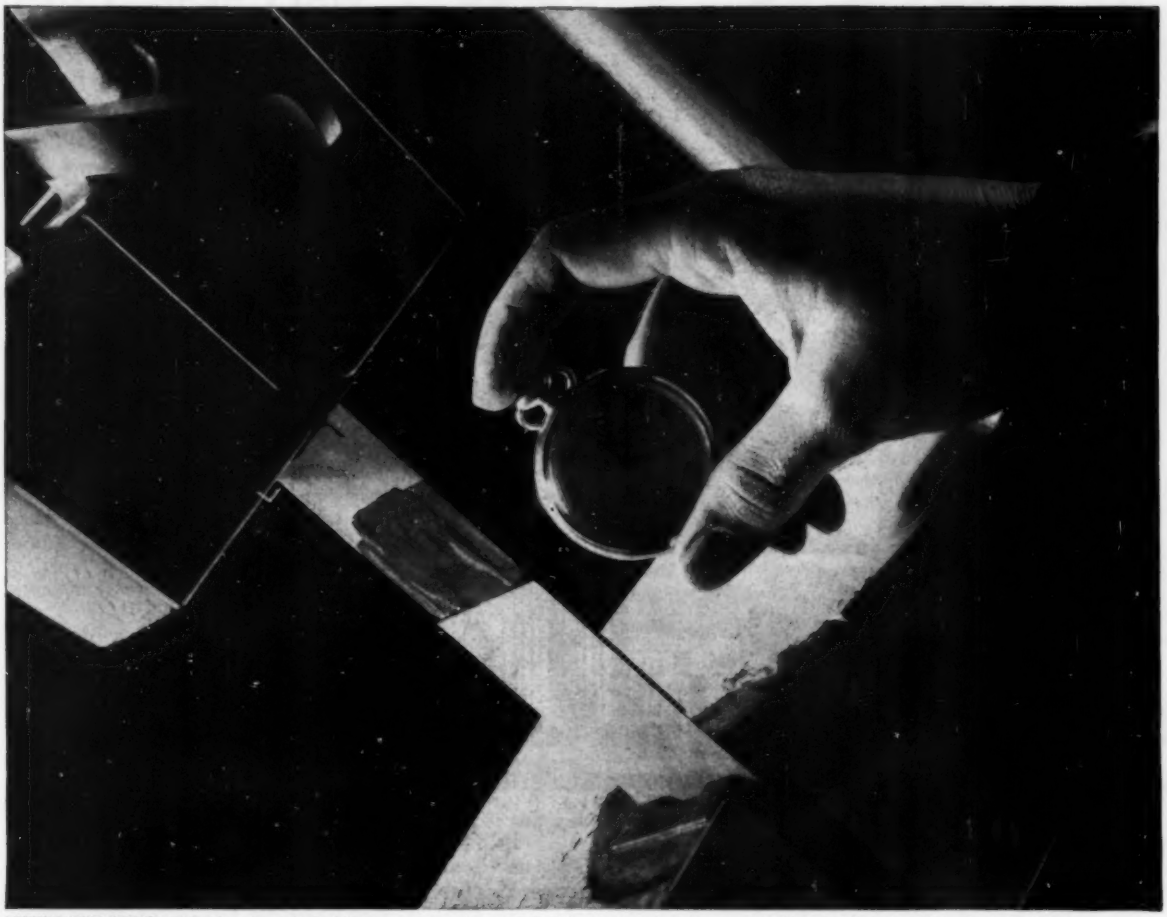

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"Hot Cargo" Curb

Supreme Court decides boycott clauses are legal under T-H, but ties unions' hands on enforcing them.

The U.S. Supreme Court's "hot cargo" decision this week answers some of the questions that have arisen on the controversial issue since enactment of the Taft-Hartley Act in 1947. But it does it without the clear-cut, all-or-nothing order that unions and employers might have preferred.

• **The Ruling**—In a 6-to-3 decision written by Justice Felix Frankfurter, the court ruled:

• A union and an employer legally may sign a "hot cargo" agreement—under which the employer agrees that workers will not have to handle goods from another company listed as "unfair" by the union because of labor troubles.

• The union may urge the employer to boycott "hot" goods in accordance with such an agreement, but may not require him to abide by it.

• The union may not "induce" workers to enforce "hot cargo" agreements if their employer decides against a boycott when the situation arises.

In effect, this says that a "hot cargo" clause is legal but unenforceable as far as unions are concerned. An employer under such a clause may voluntarily refuse to handle black-listed goods after notification by the union, without either party committing an illegal secondary boycott. However, even if he has signed a "hot cargo" clause, the employer still has "freedom of choice" to decide whether to boycott a secondary employer involved in a labor dispute. This is "a matter of federal policy," Justice Frankfurter ruled.

If a union exerts pressure, through employees, for a boycott, it is guilty of a Taft-Hartley secondary boycott violation, the court held.

• **Old Policy Reaffirmed**—This decision—although it did not go so far in its prohibition as many employers and management associations would have liked—will limit sharply the "hot cargo" activities of the International Brotherhood of Teamsters and other unions. But, because it goes no further than National Labor Relations Board policy set in 1954, it will not stop unions from negotiating boycott clauses—or union experiments with new tactics to make them effective.

Actually, the court decision this week merely puts a stamp of approval on a four-year-old NLRB policy that a "hot cargo" clause may be negotiated, but that a union violates T-H bans if it

appeals to employees to enforce a boycott under the clause.

Since 1954, the board has been inclined toward a tougher stand. Last year, it ruled that it is illegal for a union to sign a boycott clause with common carriers, because of the carriers' responsibility to provide nondiscriminatory service under the Interstate Commerce Act (BW–Nov.16'57,p50). The Interstate Commerce Commission subsequently ordered truckers not to honor "hot cargo" contract clauses.

After its decision affecting common carriers, NLRB was urged to extend the new policy to all employers. But, with a number of court actions pending on its 1954 policy, NLRB sat tight.

• **Key Issue**—Suits, filed by unions and upheld in some lower courts, argued that if "hot cargo" clauses can be legally negotiated under the Taft-Hartley Act, then it should be legal for unions to enforce the clauses.

This was the key issue in three test cases that could have been used by the court to untangle knotty questions involved by either (1) flatly banning "hot cargo" contracts as illegal secondary boycott procedure, or (2) upholding union rights to enforce them.

The court majority did neither of these things. It refused to give the unions a free hand, but it also refused to write a decision that would broaden its rulings—as NLRB suggested.

However, the opinion written by Justice Frankfurter noted that the Taft-Hartley Act does not contain a "sweeping prohibition" against all forms of secondary boycott.

Rather, the opinion said, Congress presumably designed the boycott provisions in T-H to prohibit "the most obvious, widespread . . . and dangerous practice of unions to widen the area of industrial conflict: The coercion of neutral employers themselves not concerned with a primary labor dispute, through the inducement of their employees to engage in strikes or concerted refusals to handle goods."

The opinion held that it is "most probable" that Congress intended an employer with a "hot cargo" clause to be free to decide whether to boycott or not in a concrete situation, and concluded that it is "not unreasonable" to insist that even where there is a boycott clause the union must not appeal to employees to enforce it.

• **Dissenting Opinion**—The dissenting justices contended that there is "not a word" in the legislative history of Taft-Hartley even intimating that the "unfair" goods provisions are unlawful. Justice William O. Douglas commented: "The present decision is capricious: The boycott is lawful if the employer agrees to abide by his collective bargaining agreement. It is unlawful if the employer reneges." **END**

Rockwell Report

by W. F. ROCKWELL, JR.
President
Rockwell Manufacturing Company

CUSTOMER RELATIONS are, of course, always important, but in today's buyers' market they take on a life-or-death significance. It is strange that anything so basic to the success of any business should ever be neglected.

Yet here is what one company (fortunately not ours) found out when it analyzed the reasons why some of its customers had disappeared from the books: 1% of the lost customers had died . . . 3% had moved away . . . 5% had formed friendship arrangements elsewhere . . . 9% had left due to "competitive" circumstances . . . 14% were dissatisfied with the product.

But—68% of the lost customers had gone elsewhere because of employee indifference!

Undoubtedly some of this indifference to customers is the result of the long sellers' market which many businesses enjoyed. But also a good deal of it may exist because companies that do a good job of training sales people in human relations overlook the many "non-selling" people (credit men, service men, shipping clerks, truck drivers, etc.) who have personal, phone, or mail contact with customers.

Because these people do not think of themselves as selling anything, they are often completely preoccupied with the mechanics of *their* jobs, without much thought of the *customer's* problem. And often they contact customers under circumstances in which indifference is salt in an existing wound. It doesn't take much indifference to destroy good will built up through years of good product performance, good advertising, and good salesmanship. The cost of the resulting ill will is almost impossible to overestimate.

There is no secret formula that we know of for keeping non-selling people aware of the customer's viewpoint except, perhaps, to keep everlastingly at it. We use a wide variety of media—internal house organs, letters, meetings, films, word-of-mouth—whatever seems most practical in a given situation. The main thing, we believe, is to keep pounding away at this one essential truth, which was made a part of our business philosophy many years ago by the founder of this company:

The Customer is Boss; we all work for him no matter what our job. As long as we keep him happy—and only that long—do we keep on working.

* * *

Our Gas Products Division has introduced an electronic device which enables engineers to receive on one central control panel the readings from a number of remotely located gas meters. The new remote registration system has applications in industrial plants using gas as well as in various types of gas distribution systems.

* * *

We know from experience that a sound way for us to make the most of our experience and facilities, while realizing important operating and sales economies, is to diversify only into businesses complementary to businesses we are already in. For example, both our subsidiary Edward Valves, Inc. (which joined us in 1945) and Republic Flow Meters (which joined us in 1957) serve the power industries, and both participated in furnishing substantial equipment for use in the recently opened nuclear power plant at Shippingport, Pa.

* * *

Sealed-for-life bearings that need never be lubricated are used on so many mechanical devices today that we tend to take them for granted. But at one time they were shunned as "too revolutionary." To the best of our knowledge, the first use of sealed bearings was in Delta Power Tools, over 30 years ago.

One of a series of informal reports on the operations and growth of the
ROCKWELL MANUFACTURING COMPANY
PITTSBURGH 8, PA.
for its customers, suppliers, employees, stockholders and other friends

MONEY for financing should come out "well-done," too!

A well-mixed batch of dough usually comes out of the oven well-done. Whether you are buying ovens or machine tools, the money ingredients for financing them should be "mixed" by experts. Financing works best when it's designed for the job at hand.

For over forty years C.I.T. Corporation has made a specialty of solving equipment purchase problems with the right "kind" of money and financing services.

You can finance any type of productive equipment on long terms through C.I.T. Corporation. If you choose, you can use Pay-As-You-Depreciate Plan which offers terms up to 10 years, depending on type of equipment. PAYD Plan payments are larger in the early years while machines are at the peak of their efficiency and profit-making ability —lower in the later years.

There's a C.I.T. Plan that is right for you. For complete details write or call any office listed below.

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CIT CORPORATION

In Labor

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Labor Reform Bill Moves to House After 88-1 Approval in Senate

This week, to nobody's surprise, the Senate passed the mild Kennedy-Ives labor reform bill. Whether it will make further progress toward becoming law depends on the outcome of political ferment in the House and inside labor.

This is the situation:

• **The House Labor Committee is reluctant to act.** But Democratic leaders feel that failure to push the Senate bill along would give GOP a political issue this fall—a charge of Democratic softness on labor corruption. So Speaker Sam Rayburn may try to prod the Labor Committee into reporting the bill favorably.

• **Organized labor, having made a basic reappraisal of its position, will push quietly for House adoption of the bill.** Even though it dislikes a further federal entry into union internal affairs, it feels that it's better to accept a mild bill now than to risk the chance of tougher legislation in 1959.

Senate passage of the bill sponsored by Sens. John Kennedy (D-Mass.) and Irving Ives (R-N. Y.) came after five days of debate, and by an 88-to-1 vote. Sen. George Malone (R-Nev.) was the lone dissenter. In final form, the disclosure and labor controls bill "retains all the essential provisions" of the original bipartisan proposal, the sponsors say. It's "a strong bill [that] affords substantial guarantees of democratic rights to union members," and safeguards for union funds.

In floor action, "irrelevant" amendments and "extremist" revisions that would have been "overly punitive" or "disruptive of stable labor-management relations" were defeated, Kennedy said.

Some changes proposed by Labor Secy. James P. Mitchell were made, in line with his appeal for a "more workable law" with "fewer loopholes." But Mitchell—who returned hurriedly from Europe to make his pitch on a labor reform bill—was rebuffed generally in his efforts for legislation closer to what the Administration proposed earlier in this session.

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Steel and Aluminum Employers Shave SUB Payments in June

Unemployment and short work weeks in steel and aluminum are forcing cutbacks in supplementary unemployment benefit payments to laid-off workers.

United States Steel Corp. and Aluminum Co. of America have reduced SUB payments for June to 75% of normal levels. They join Republic Steel Corp. and a host of smaller steel producers, fabricators, and related companies that have cut benefits, some below the 75% level.

Under United Steelworkers contracts, SUB payments plus state unemployment compensation benefits are designed to yield up to 65% of take-home pay. The SUB plans provide for reduced payments if reserve funds set aside for benefits fall below stipulated levels. Many now have.

The drain on the funds set aside for the payments has come from three directions:

• **Widespread unemployment** in the steel and aluminum industries has increased total payments going out to laid-off workers.

• **Lower operations** in recent months have reduced the income for SUB reserves, financed on a basis of man-hours worked.

• **Exhaustions** of state unemployment compensation benefits, caused by prolonged layoffs, have forced SUB payments up substantially.

SUB payments began last September, a year after the companies started to build up their trust funds. Since then, an estimated $30-million has been paid out. In mid-May, 125,000 idled steelworkers collected an average $23.50 a week from SUB.

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Cement Pattern Spreads Over U. S., With 52 Manufacturers Signing Up

A wage, pension, and fringe benefits package of about 15¢ an hour has now spread through the nation's cement industry, following a pattern established in negotiations with Ideal Cement Co., one of the larger producers (BW—Jun.7'58,p104).

The United Cement, Lime & Gypsum Workers has signed one-year agreements with 52 manufacturers, covering 17,000 workers and calling for a general 8¢-an-hour pay increase plus a half-cent more in between-jobs increments.

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Two Maritime Groups End Strikes; Ship Engineers Continue Walkout

Two down and one to go was the score at midweek in East Coast maritime negotiations. Two short strikes involving radio operators and unlicensed tanker personnel were settled on contract terms set in earlier negotiations between the National Maritime Union and the American Merchant Marine Institute, covering passenger and dry cargo seamen.

The third walkout involving ship engineers represented by the Marine Engineers Beneficial Assn. affected 480 cargo and passenger ships operated by AMMI and independent owners. **Fringe demands were the main stumbling blocks to a settlement.** But serious rivalry between NMU and MEBA's sister body, the Seafarers' International Union (page 127), may complicate and even delay a strike-ending contract. Pay increases were passed up in earlier maritime settlements.

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Dr. Edward Jenner performs a pioneer vaccination. The Bettmann Archive

It was only an old wives' tale

Gloucestershire farmfolk long had believed that having mild cowpox made a person immune to deadly smallpox. Other country doctors doubtless had heard this — but when a dairymaid mentioned it to Dr. Edward Jenner in 1775, he acted.

Sparked by the milkmaid's comment, Jenner perfected smallpox vaccination — a lifesaving discovery which has been called the "founding of preventive medicine".

Like smallpox, many ancient scourges are rare diseases today, thanks to the inspired and painstaking labors of gifted men like Jenner — and the precise care that constantly governs the operations of modern pharmaceutical manufacturers. It is here that Taylor has been able to be of real service.

The deep fermentation process for mass-producing penicillin, for example, demanded precise temperature control during fermentation and processing. It was achieved automatically by Taylor controls.

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In Washington

• • •

Polled Trade Association Heads Tag Inflation as No. 1 Long-Term Problem

The Senate Finance Committee this week published another set of answers in its continuing series of polls on the state of the U.S. economy. This time the replies to questions formulated several months ago by the committee came from the heads of 12 business and trade associations.

The trade association people, in general, agree with 28 blue-chip corporate executives—whose replies were published two weeks ago (BW—Jun.7'58,p31)—that inflation is the nation's chief long-term problem, that long-range tax reform is essential, and that the current recession shows no tendency to run into a depression.

But the association heads, in greater relative numbers than the corporation heads, prescribed hurry-up reductions in federal taxation as a means of ending the present business slump. In varying degrees and combinations, tax cuts were recommended by Philip Talbott, president, Chamber of Commerce; Milton C. Lightner, president, National Assn. of Manufacturers; Tom Pickett, executive vice-president, National Coal Assn.; and James G. Patton, president, National Farmers Union.

Patton expressed the most extreme views of any of the 12 association heads. Besides income tax reduction and elimination of all excise taxes, he favors establishment of "margin or price control on such basic key industries as steel, chemicals, and electronics."

More representative of the group as a whole are the comments of G. Keith Funston, president of the New York Stock Exchange. Estimating that U.S. corporations will need to spend $350-billion for new plant and equipment between now and 1965, Funston advocates tax reform to encourage venture capital and "eliminate a principal cause of irregularities in the business cycle."

• • •

Court Forbids Taxpayers to Combine Two Methods of Suing for Refunds

The Supreme Court this week told taxpayers that they must pay the full amount of an income tax deficiency claimed by the government before they can sue for a refund.

The decision prevents taxpayers from combining the advantages of two separate courses: (1) pay the whole deficiency and then sue for a refund in more lenient federal district court, or (2) pay nothing and challenge the claim in the tough U.S. Tax Court.

Tax lawyers figure claimants stand a better chance in the district courts, but to get there you have to pay first. The test case decided this week had sought to get into district court without paying in full.

But Chief Justice Warren says Congress intended no such "hybrid remedy." So you have to take all of one way or all of the other: either pay first, and sue in the district courts, or don't pay at all and take your chances with the Tax Court.

The Supreme Court also acted in these cases:

General Aniline & Film Corp. The suit of Interhandel, a Swiss holding company, was sent back to the district court for trial on the merits of Interhandel's claim to the $100-million property. The action probably means more years of litigation before a decision on the fate of GAF, seized during World War II as enemy alien property. The Supreme Court held that the lower court erred in dismissing without trial on the merits Interhandel's claim—disputed by the government—that it was not a cloak for German interests.

Gold mines. Operators of gold mines closed during the war as nonessential lost their bid for compensation. By ruling that the closing did not constitute a "taking of property," the court saves the government a liability between $30-million and $60-million.

The NBC station swap. Antitrusters won a chance to rescue their suit charging Radio Corp. of America and its subsidiary National Broadcasting Co. with illegally coercing Westinghouse Broadcasting Co. into a 1955 exchange of radio and television stations. The court agreed to review next term a lower court dismissal of the case, which held that the Federal Communications Commission had approved the deal.

Hudson River ferries. The fate of the New York-New Jersey passenger ferries is still undecided. The court agreed to hear pleas next term by three railroads which want to drop the unprofitable service, but have been stymied by the lower courts. At issue is whether the Interstate Commerce Commission has the authority to permit the dropping of passenger service, while keeping freight ferries running.

• • •

Democrats Map Ambitious Program For Development of Atomic Power

Democratic leaders, convinced that the atomic power development program laid out by the Atomic Energy Commission won't get the job done, are building up steam behind a program of their own.

The Democratic-run Joint Committee on Atomic Energy wants Congress to authorize federal construction of at least two reactors for the next fiscal year. **Long-range Democrats propose that AEC design 21 new reactors during the next five to seven years,** with at least half of them marked for government construction if private enterprise fails to show any interest. Estimated cost of the program is $1.3-billion.

Sen. Clinton Anderson (D-N.M.), who is expected to head the Joint Committee next year, doubts that the incentives are sufficient to encourage industry to do the job. **So he's throwing his considerable weight behind suggestions that AEC pay up to 90% of the difference in cost of private nuclear plants and conventional plants of the same capacity.**

Anderson is hopeful that this approach would end bickering between private and public power interests.

Market Sheds Defensive Mood

Strength of averages (right) and gains by bulk of groups, convince most Wall Street pros a big drop is no longer likely. They see recovery, not bullish phase. What investors are doing now is shifting to stock groups that will get the most benefit from a rise in business activity.

No one has been more surprised by the recovery of the stock market since the beginning of the year (charts, above) than Wall Street's professionals. Most of them have been predicting a drop, rather than a rise, in the market averages. But by this week, the majority appeared convinced that a serious decline was no longer probable.

What brought about this sharp shift in professional sentiment? The answer is the performance of the market itself. Since January, the three main sectors of the market—industrials, railroads, and utilities—have rallied strongly. True, the upward movement has been punctuated by declines, but these have been infrequent and temporary, more the result of profit-taking than of selling pressure.

• **Buoyant Factors**—It's a little harder to pin down the reasons for the market's strength. Basically, though, it has been due to the overwhelming belief that inflation, not deflation, is the real danger. Investors have discounted the recession as a passing phase. There has been no disenchantment with stocks as an investment; rather, there has been a shift from the growth issues to more defensive equities.

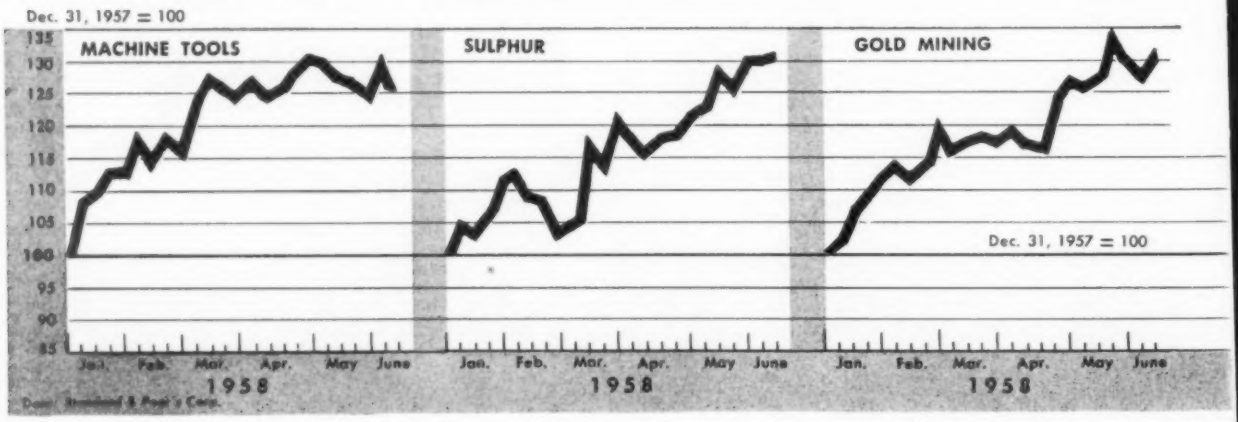
The market has been helped, too, by a number of technical factors. The lowering of margin requirements, and the easing of money, have played a part in the recovery of stock prices. And institutional investors—pension funds, mutual funds, life insurance companies, bank-managed trust funds—have increasing amounts available for stock purchases.

These factors have kept stock prices rising. Even the railroads, many of which are currently operating in the red, have climbed up from the bottom. The railroad average is up 23%, since the beginning of the year—more than twice the advance made by the industrials. In fact, it's hard to find stocks that have not shown some recovery.

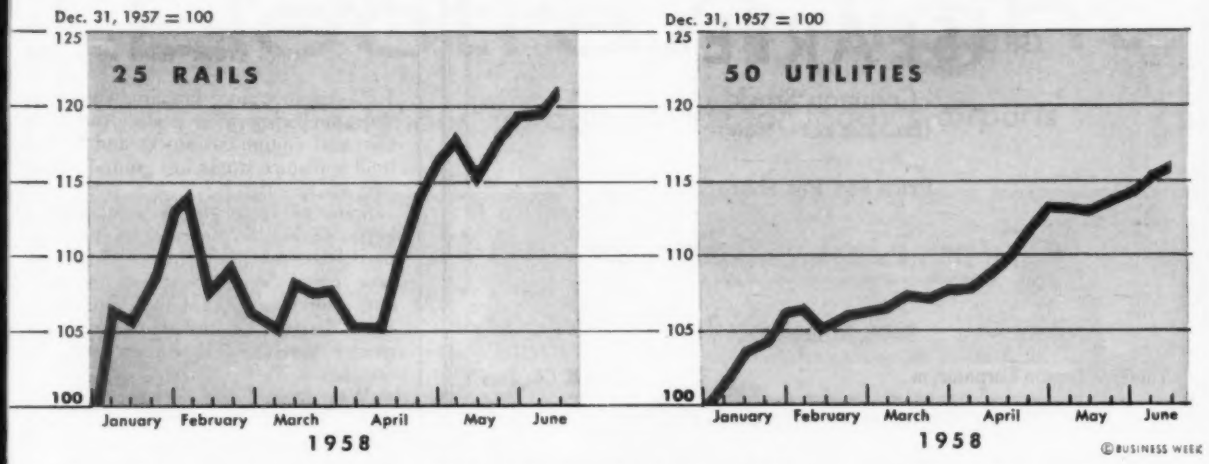
• **It's the Groups That Count**—This over-all strength has finally impressed most professionals. In general, the pros pay little heed to market averages. They are much more interested in the performance of specific groups (charts, below). But the rise in the past six months has been a general one, with only a few stock groups failing to show a gain.

Some groups, of course, have done much better than the averages. Surprisingly, they include a number of areas that have been extremely hard hit by the decline in business activity. Stocks of machine tool makers, for instance, have jumped 30% since January; so have stocks of sulphur producers; and steel stocks have registered a 21.9% increase. The main reason for the rise in these particular groups is the sharp fall they suffered last year. Many machine tool stocks fell over 50% from their highs when the stock market cracked last fall. In the past few months, they've been bought by speculators out for a quick profit and by investors

These Groups Have Soared



But Pros See No Bulls in Sight



betting on long-term growth. Yet, even at present levels, they are still well below their peaks.

• **Recovery, Not Bull Market**—This points up one key fact about the present market. Its performance is characteristic of recovery—not of a new bullish phase. In revising their own views, the professionals concede that they are no longer expecting a new bear market, but, at the same time, they do not look for any early testing of the bull market highs.

Instead, they are predicting that the over-all averages will stay reasonably close to present levels for the rest of the year. Some believe a 10% rise is possible, and others are still not ruling out a decline of at least 10%. But the prevailing view is that there will be sharp fluctuations in the stocks that make up the averages rather than any major change in the averages themselves.

• **Shift**—It has been the opinion of many professionals that money could be made in specific groups—even if the market declined (BW—Jan.11'58,p117). But now that the market has recovered over half of its losses from the July, 1957, peak, there has been a definite shift in the kind of groups being favored.

Despite the rise in some depressed industry stocks, most of the big gains during the past six months have been chalked up by "recession-proof" issues. Gold mining shares, for example, which were depressed during the boom, registered an increase of over 28% since January. And most food stocks, which were also laggards in the bull market, have forged ahead of the over-all averages.

Some of the groups that ran counter to the over-all trend during the July-December decline and continued to rise in the recovery are now lagging a bit. Tobacco stocks, for example, are now only about 16% above their January prices—a slower rate of advance than many other groups have shown. Compared with prices a year ago, of course, tobaccos are one of the best performers, but now other groups are rising at a faster pace.

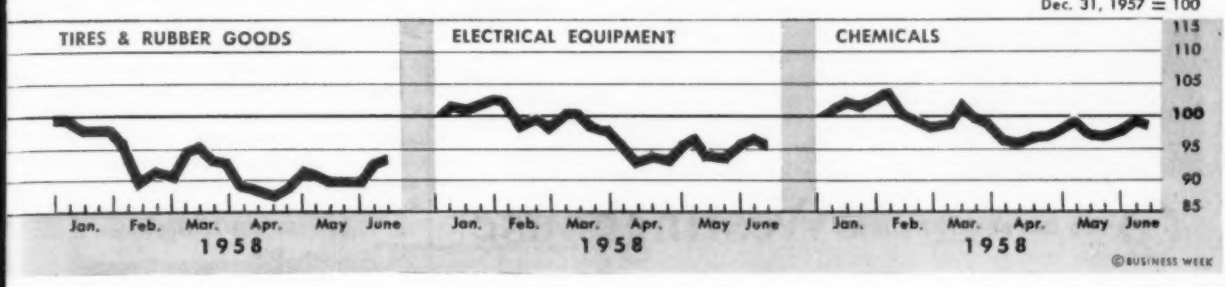
It may well be that other big favorites will make less impressive showings in the next six months. Utility stocks, which have advanced almost 24%, may now stabilize. Drug stocks, another non-cyclical "growth" category, may be unable to match the 20% rise achieved in the first half. And such defensive categories as biscuit stocks, and dairy products, up 18.5%, may now be hurt by switches into groups that stand to gain in an economic upswing.

Certainly, the chances of continued gains by recession-proof groups appear slight. Gold mining stocks get a play only in economic declines, and if the market is now betting that the recession is over, then gold shares are due for a fall.

• **Outlook for Growth Stocks**—By the same token, it is doubtful that many acknowledged growth stocks will soon reach their previous peaks. Investor sentiment is still cool to many of the bull market's biggest gainers, and it will take more convincing evidence of a new business boom to engender new affection for them.

Chemical stocks, which rank high as growth issues, failed to show any gain over the past six months. And in the preceding decline, they suffered a sharp drop. The electronics group, another prime growth area, managed a mere

These Have Fallen Behind



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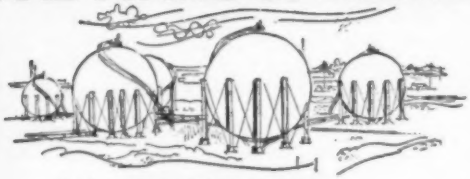
Merrill Lynch, Pierce, Fenner & Smith — Stone & Webster Securities Corporation

White, Weld & Co. — Dean Witter & Co.

June 11, 1958

DANGER!

EXPLOSIVE ATMOSPHERE



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World's largest selling brand of water coolers

YOU CAN BE SURE...IF IT'S Westinghouse

". . . most professionals see no signs of the spiraling decline that was evident in 1930 . . ."

STORY starts on p. 136

1.1% advance since January, which left them far below their peaks. And both electrical equipment stocks and household appliance stocks lost ground in the past six months.

Some of these groups may make a better showing in the next few months, partly because they are so depressed now, partly because investors are more and more convinced that the long-term dangers of inflation are much greater than any short-term drop in earnings.

• **Who Buys**—Some professionals hold that individual investors were a big force in prompting the present market rise. They explain that a great many institutional fund managers held back in the first few months, expecting a drop in market prices. But individual buyers committed their funds, and kept prices from falling. Now, institutional funds are not only committing new funds to the market but are pouring in some of the accumulated money held back earlier.

One indication of individual interest in the stock market is the growth in mutual fund buying. Most mutual funds report a big increase in the number of shares sold—and a decline in shares redeemed. In addition, a number of new mutual funds have been organized, which are putting money into common stocks.

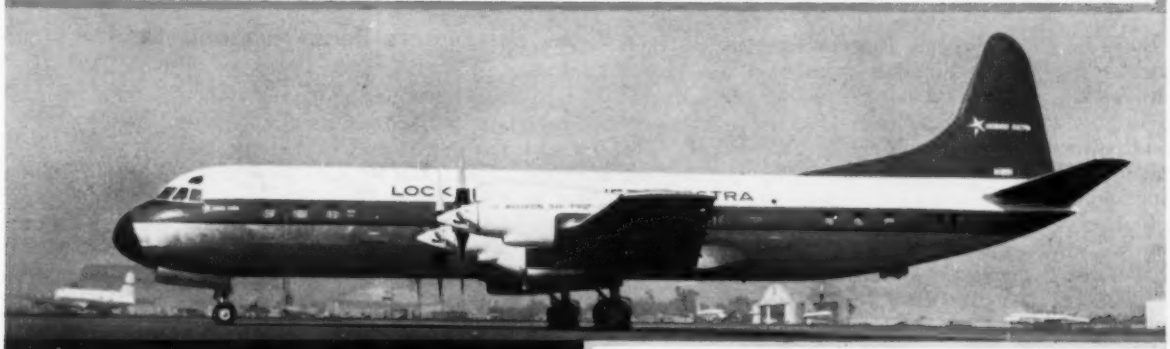
• **Minority View**—While the prospect is for a good deal of shifting in stock groups, which will keep the averages stable, a few professionals still believe that the market has reached a precariously high level and may suffer a sharp fall. Those who take this view point out that the market staged a similar recovery in late 1929 and early 1930, only to plunge to catastrophic depths in the period that followed. With investors ignoring dividend cuts and poor earnings reports, they warn that a similar situation may now develop.

• **Where Pros Stand Now**—But this is a minority view, and the minority is continually shrinking. Most professionals now agree with investors who bet that the contraction in economy activity would be comparatively short-lived. They see no signs of the spiraling decline that was evident in 1930. On the contrary, the market is now engaged in a shift from defensive stocks to those that will benefit from a rise in business. **END**

Coming this fall...

Electra/Flight

"good neighbor" jet age service for today's airports



YOU'LL HEAR THE DIFFERENCE—The Electra is quieter on the ground as well as in the air. The four powerful General Motors Allison Prop-Jet Engines are actually quieter on taxi and take-off than today's piston-engine transports. The neighbors will hear only a swish! as the Electra climbs quickly out of sight.

Electra/Flight takes you where *you* want to go. Today's facilities of more than 1200 world airports are entirely adequate for Electra/Flight service. Flight tests show the Electra can land with full load on short runways in just 2300 feet.

Electra saves you time on the ground—because you board and leave your Electra/Flight close to the terminal. For swiftest getaway you can carry your own luggage. And notice another timesaver feature: While you board, food and fuel are loaded, airplane checks are completed...from landing to take-off just 12 minutes!

PEOPLE WHO MANAGE AIRPORTS like the Electra for many reasons: Because Electra gets higher faster on "climb-out," its presence is unobtrusive—Electra truly is a good neighbor. Ground equipment is reduced to a minimum because Electra can carry its own built-in stairs and engine starters.

CONTROL TOWER PEOPLE like the Electra because it fits right into today's traffic control system...no radical approach, landing or take-off problems. Electra's big fuel capacity enables it to "hold" over airports for long periods and the big turbine-powered props give Electra extra maneuverability for fast "wave-offs" if required.

These leading airlines will offer Electra/Flights: Aeronaves de Mexico • American Airlines • Ansett/ANA of Australia • Braniff Airways • Cathay-Pacific Airways • Eastern Air Lines • Garuda Indonesian Airways • KLM Royal Dutch Airlines • National Airlines • PSA—Pacific Southwest Airlines • Western Airlines

LOCKHEED ELECTRA

The Finest Jet Age Airliner for City-to-City Travel

Lockheed Aircraft Corporation, Burbank, California

In the Markets

• • •

Speculators Hurry to Cash Profits, So Bond Prices Take A Beating

The unmistakable shadow of the bear formed a cloud over the government bond market this week. Prices dropped sharply as a result of selling pressure, mostly by speculators.

Ever since the Federal Reserve reversed its tight money policy last November, speculation has helped push up the price of bonds. With the stock market in the doldrums, speculators rushed to government bonds, which can be bought on a 5% margin. The result was a rampaging bull market that meant big paper profits for bondholders.

This week some of the speculators decided it was time to cash in on their profits. The urge to return to the strong stock market was undoubtedly a factor. So was the feeling that better business prospects made a further rise in bond prices—and drop in yields—doubtful.

Normally, a business upturn does not immediately spell the end of easy money. But this year, with so much speculation in the market, banks and other institutions are intent on getting out early. This could mean shortening of the lag between a business upturn and the end of the decline in rates. In fact, there is an "early early" school of thought that holds that, with so many investors anxious to sell before the turn, it is advisable to get ahead of the crowd.

Dealers don't feel that this week's bearishness necessarily marked the end of the bull market. They point out one big technical factor—this was the week when buyers of the new Treasury long-term bonds had to pay for the issue—as a situation that has always created difficulty in the bond market.

Moreover, some observers think this week's drop in prices will hasten Fed action to ease the market again. They reason that the Fed does not want any premature tightening of credit, partly because the Treasury faces heavy financing operations, partly because the Fed wants to encourage private borrowing.

• • •

Investment Funds Continue to Grow and SEC Authorizes a Study of Them

The size and influence of investment companies will be the subject of a study by the University of Pennsylvania's Wharton School, backed by the Securities & Exchange Commission.

Lawrence M. Greene of SEC explains that the study will explore the relationship between the size of a fund and its investment policy, the character of management and performance, the mechanical operations of the securities exchanges, and the question of the funds' control or influence in corporations whose stock they own.

Meanwhile, mutual fund growth continues. This week, the National Assn. of Investment Companies reported that **net assets of 144 funds at the end of May went over the $10-billion mark for the first time.** Sales figures for the individual funds during the month held up well, indicating that the introductory sale of One William Street, Lehman Bros.' entry into the field, did not harm competitors (One William Street's sales totals were not included in the NAIC roundup).

• • •

Florida East Coast Ry. Bonds Rise As Speculators Sense a Good Deal

Evoking memories of the days when there was a big market in Wall Street for defaulted rail bonds, speculators, scenting an end to the reorganization battle over Florida East Coast Ry. Co., boosted its 5% $1,000 bonds of 1974 from $880 to $1,060.

Behind the rise is an Interstate Commerce Commission plan, which calls for a replacement of the bonds with a new package—a $500 par 4½% fixed bond, a $500 par 5% income bond, 32 shares of stock, as well as pro-rata distribution of any excess cash as of the consummation date.

Speculators evidently think this package is worth far more than the old bond; and a few analysts have reckoned that the common shares alone may be worth $6 per share.

But it's likely that the reorganization is some way off. Objections have been filed by St. Joe Paper Co., holder of 56.1% of the bonds, and Seaboard Air Line RR and Southern Ry., which offered plans of their own. Even if it does go through, analysts question whether the new package will be worth what speculators anticipate. They insist that the road's financial position is unclear.

• • •

Stocks Climb to High for the Year, Then Sag Mildly on Profit-Taking

A new high for the year was reached this week by the stock market. It was followed by profit-taking that saw the averages recede, yet there was no hint of a real retreat.

Brokers attribute the latest push to increased evidence of a business pick-up that has stimulated buying by both individuals and institutional investors. **Buying has been heavy in stocks that, up until now, have lagged behind the over-all advance** (page 136).

Some analysts question whether earnings will justify present stock prices. They point out that estimates of second-quarter earnings are not good, particularly compared with the 1957 results. It is clear, however, that investors are betting on a fatter second half.

There's still a sizable group skeptical about the market's rise. This is clear from the hike in the short interest position for mid-June, which hit a new high at 5.7-million shares. Brokers say, however, that this is bullish for the short run, if not for the long.

New-type concrete paves the way to carefree trips, happy outings

"Father knows best... this new-type, sound-conditioned concrete means more family fun and driving safety!"

Says **ROBERT YOUNG,** noted film actor, star of NBC-TV's "Father Knows Best"

"The going's smooth! No thumps on this continuous-laid concrete for the Interstate System. And they're building into these highways the kind of safety every family wants. Highway engineers tell me it can mean the saving of thousands of lives each year."

Pleasure trip? You've never had a ride so smooth and quiet. Laid a new way, this pavement has no joints . . . only tiny *sawed-in* cushion spaces you can't *feel* or *hear*.

And a process called "air entrainment" puts billions of microscopic bubbles into new-type concrete, prevents roughening from freezing or deicers. A specially designed subbase keeps the pavement firm and level. Laid flat, this pavement *stays* flat.

And you feel so safe! New-type concrete has a grainy surface to give it dependable skid resistance. Its light color gives you far better visibility at night.

Designed to meet the Interstate System requirements for highways suited to 1975 traffic, this is literally the pavement of tomorrow . . . here today. It has an expected life of 50 years and more . . . with upkeep costs as much as 60% lower than for asphalt. Yet initial cost is moderate. That's why it's the preferred pavement for the interstate and defense network now under construction.

Over 118 million bags of cement were used in paving last year . . . enough to build a 4-lane superhighway, New York to Los Angeles.

NEW-TYPE

Concrete

PORTLAND CEMENT ASSOCIATION

A national organization to improve and extend the uses of concrete

He hangs his hat on a sky hook

Skymaster, Skyraider, Skystreak, Skyrocket, Skyknight . . . Dauntless, Havoc, Invader . . . DC-3 to DC-8 . . . they stream through Donald Douglas, Jr.'s busy weeks. Now, the giant Air Force IRBM, Thor . . .

In twenty furiously fast years, the career of Douglas Aircraft's young president has capsuled the grandaddy prop transport and today's rocket propulsion. Douglas developed the Roc 1 in the early 40's, has produced nearly 20,000 missiles of all types since — today has responsibility for the complete Thor missile system now in volume production. Why then, you might ask, should Donald Douglas, Jr. and at least 150 of his associates read a magazine such as Business Week, that's seldom if ever printed a logarithmic equation? Answer: because Business Week prints so much on the equation of business, itself . . . Wall Street and Washington, manufacturing and marketing, management and labor . . . so much more business news than any other magazine. But more than this, Business Week is meant for the management man who must keep up with the future . . . its function: report, interpret, point the trend. Because its enormous, all-business news-gathering facilities permit it to pinpoint the event, spot it in proper perspective, and present it fast and reliably, management men everywhere vote Business Week "most useful" of general-business and news magazines. Acknowledging their own best argument, they place more advertising pages in it, too. *You advertise in Business Week when you want to influence management men.*

A McGraw-Hill Magazine: Member Audit Bureau of Circulation

ESTHER WILLIAMS HAS THE HERTZ IDEA...

Esther Williams, president of one of the nation's leading swimming pool companies.

BECAUSE HERTZ RENTS CLEANER, MORE DEPENDABLE CARS!

Sure, this picture was posed. But, there's no doubt that Miss Williams makes good use of The Hertz Idea.

For besides her movies and TV appearances, she's the busy president of the International Swimming Pool Corporation—exclusive manufacturers of Esther Williams Swimming Pools. To check on her pool installations from coast to coast, Miss Williams goes by fast train or plane—rents a new Hertz car *there*. She says, "The car I drive has to be neat and clean. Hertz never lets me down."

Try The Hertz Idea yourself. Hertz has more offices by far where you can rent a new Turboglide Chevrolet Bel Air or other fine car. National average rate's only $7.85 a day plus 9 cents a mile—including all gasoline, oil and proper insurance.

Next trip, call your local Hertz office to reserve a car in the United States, Canada or wherever in the world you're going. We're listed under "Hertz" in alphabetical phone books everywhere! Hertz Rent A Car, 218 South Wabash Avenue, Chicago 4, Illinois.

More people by far...use

HERTZ

Rent a car

LISTEN TO HERTZ BUSINESS AND WORLD NEWS
FEATURING WALTER CRONKITE—EVERY DAY ON CBS RADIO

ASK ABOUT "RENT IT HERE...LEAVE IT THERE" SERVICE!

PERSONAL BUSINESS

BUSINESS WEEK

JUNE 21, 1958

The credit card boom is still going strong.

American Express Co. has just announced it will enter the field this fall with a new system bigger and broader than anything on the market today. Details of the American Express plan aren't out yet. But the big new feature —in addition to worldwide coverage of hotels, restaurants, and the like— will be **card coverage of airline, bus, rail, and steamship charges, including "package tours" abroad.**

Meanwhile, here are more credit card trends you should know about:

The "universal" card—covering a wide variety of goods and services in the U. S. and abroad—promises to offer more and more in the next year or two. Examples:

The Diners' Club, pioneer in the field, caters to eaters-out and executive travelers. Membership (at $5 per year) has just hit a record 700,000. The club has offices in major cities; new applications take about three weeks.

With a Diners' Club card you can now get credit at nearly 17,000 establishments in 76 countries. **The list includes restaurants, night clubs, hotels, motels in resort areas, auto rental agencies, some gas stations, flower and food shops, temporary clerical help, catering services, limousines, packaged liquor in 16 states, interstate beverage gift service, gift certificates, shipboard and overseas gift shops**—all on a single card. The emphasis is on worldwide coverage.

The Universal Air Travel Plan's card lets you charge the cost of your airplane ticket. This has expanded to include 106 major airlines. You pay a deposit of $425 for an individual card or a company contract calling for many cards. **If you get an individual card, you might as well ask for the "International" type, which is good for overseas flights, instead of the more limited "North American" card**—it requires no extra deposit. One UATP service you may not know about: the "Q" card, which gives charge privileges to members of your family—also without any extra deposit.

With a UATP card, you can charge flight tickets and excess baggage charges. Also, while they don't advertise it, a number of carriers will cash checks in reasonable amounts for UATP card holders.

Long-term cards—to run two years or more, instead of the usual one— are a coming trend. **At least two major oil companies, Gulf and Shell, have permanent service station cards,** and it's predicted that soon all the major oil concerns will be issuing such cards. **You can expect the permanent card idea to catch on in other fields, too.**

Card systems for sportsmen are cropping up. The biggest to date is Cruise Clubs, Inc., 6 School St., Port Washington, N. Y.—designed for boat owners. **The card ($5 per year) covers services such as gas, supplies, equipment, dockage, repairs, overnight accommodations, restaurants, and car rentals.** So far, several hundred marine and other waterside establishments on the Atlantic Seaboard are participating; the plan is to extend service to the West Coast.

Just how big a bill you can run up with your credit card is still an open question—but most clubs tend to be quite liberal. With a card covering restaurants, you can usually walk in and charge for a party of four or 40, without the slightest danger of embarrassment. The card club—which

accepts a 7% fee from the outlets—assumes the risk. But it expects you to pay bills promptly on a 30-day basis and handles your credit in pretty much the same way as a department store does.

There are no general rules regarding how much you can charge in hotel bills, since each hotel has its own house rule. Generally, however, you can count on charging hotel bills up to two weeks, at a maximum rate of maybe $300 a week. Usually hotels will cash checks for from $100 to $250 for you (if you're unknown and present an honored card) and for as much as $1,000 (if you're a known credit card customer and let the hotel contact your bank).

The Universal Travel Card, issued by the American Hotel Credit Corp., Greenwich, Conn., is one of the more practical cards to carry, according to some hotel men. It's honored in most of the big U. S. hotels and provides prompt service without question. Reason: **AHCC, under its agreement with hotel members, makes good a bad check or dead house account in amounts up to $500.**

Can family members charge on your card? Usually not—except with oil company cards. If you lose a card, and report it promptly, in most cases you're free and clear of unauthorized charges. That's true of the Diners' Club and many others.

—•—

If scheduled flights sometimes don't fit in with your business or pleasure trips, you may want to take advantage of the increased number of planes for rent. For example, the Hertz Rent-a-Plane System, Inc., now has begun operations in 56 of the nation's cities.

Rates for travel in a four-passenger Cessna 172 (4-place), with pilot service, vary from $1.50 an hour plus 18¢ a mile to $3 hourly plus 19¢ a mile. On a fly-it-yourself basis, the cost would be from $1.25 plus 13¢ (Cessna 172) to $15 plus 40¢ (Aero-Commander, 6-place).

With yourself, or maybe your company's pilot, at the controls, a round trip typical flight from Chicago to Fort Wayne, Ind. (340 miles), in a four-passenger Cessna 174 (cruising speed 139 mph.) would come to about $62.20, allowing for a three-hour layover. (With three passengers, the average cost would be $15.55 each.) The same flight, with pilot provided, would cost about $84.80 plus 10% tax.

—•—

There's a saving in store if you're renting a mail box in a main post office in a major metropolitan area. Fees will be reduced July 1 as part of a nationwide rate adjustment. For example, if you've been paying $24 a year for the commonly used No. 1 lockbox, cost will drop to $18.

But you may find either an upward or downward adjustment of a few cents in the rate for a box used in the small post office near your summer home. Of the 38,000 post offices in the nation, about one-half will continue to charge the same fees for box service.

—•—

Have you been curious when you've heard someone order a "marteener" or a "new-fashioned"? They're two non-alcoholic drinks that are growing in popularity. The **"marteener,"** served in a martini glass, is simply ginger ale over shaved ice with a cherry. As for a **"new-fashioned,"** that's cherry soda with a slice of orange and a cherry, served in an old-fashioned glass.

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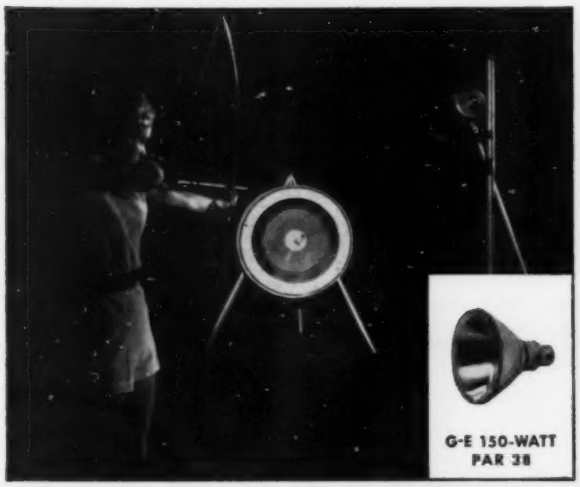
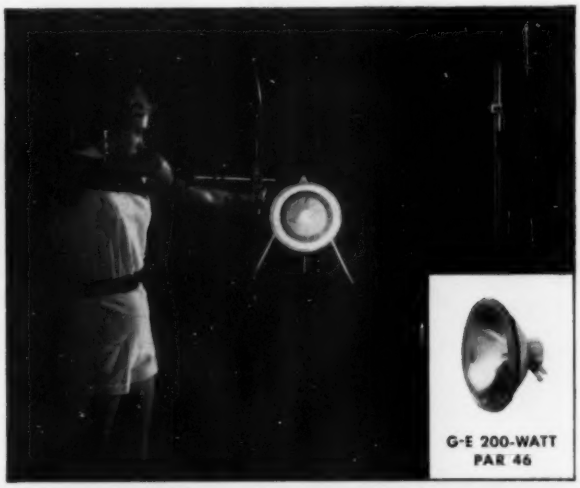
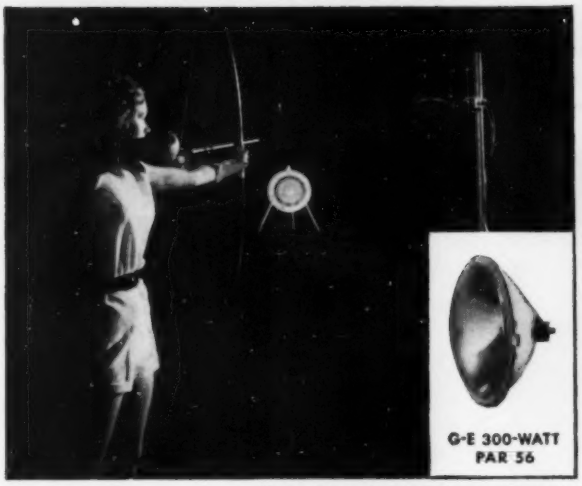
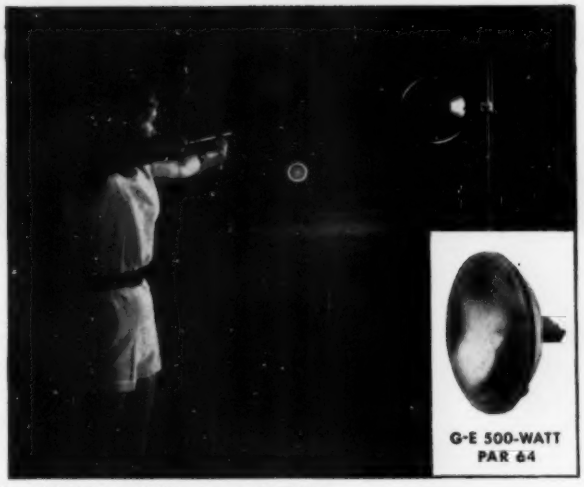








These pictures show how General Electric's 150-, 200-, 300- and 500-watt precision PAR spotlights concentrate the beam, throw it a long way, give you all the light you need, where you want it—simply, conveniently, and at low cost of installation and operation.

General Electric precision PAR Lamps give you extra value by giving up to 5 times the light in the heart of the beam!

There's a General Electric precision PAR Spot or Floodlamp to fit your specific lighting job. Which one you choose will depend on the amount of light you want . . . the distance . . . and the area to be covered. But whichever you select, precision PARS will deliver from 1¾ to 5 times as many footcandles in the center of the beam as blown-glass R-type reflector lamps of equal size. You use the precision PARs where you want accurate *control* of light within a sharply defined beam . . . use the blown-glass types where this precision control is unimportant.

HOW DO YOU BENEFIT? This precision beam control means you can give your store or plant new beauty in after-dark impact. You can give merchandise, displays or work areas a new degree of effectiveness—with these simple lighting tools.

G-E PRECISION PAR LAMPS are built to take rough duty indoors or out. Their sealed-in reflectors never need cleaning because air, dust and moisture are sealed out. Choose from nearly 30 combinations of sizes, beam patterns and colors. For more information, write: General Electric Co., Large Lamp Dept. C-834, Nela Park, Cleveland 12, Ohio.

Progress Is Our Most Important Product

GENERAL ELECTRIC

PRODUCTION

Jet Tests Move at Jet Speeds

FLIGHT TEST starts with ground crew's wave-off to a 707 at Seattle's Boeing Field. It's a standard production model outside, but inside a maze of gear will record its behavior.

Together, Boeing and CAA are readying the 707 jet for service months ahead of schedule—and the competition.

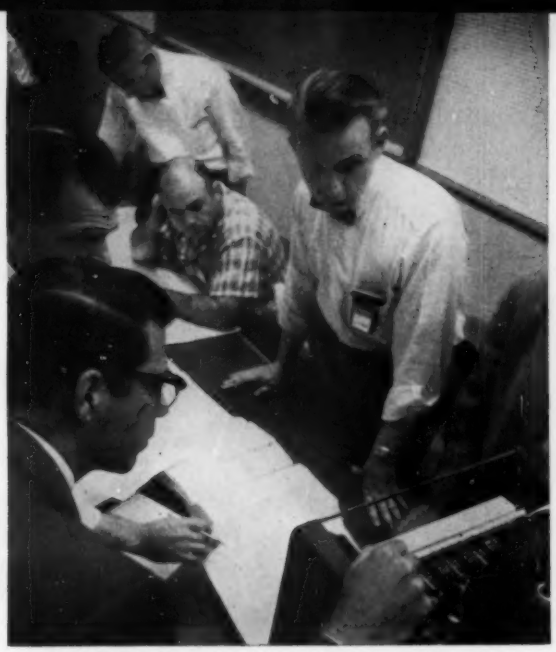
Sometime this fall, Boeing 707 jet transports will start whisking paying passengers from New York to London in 5½ hours. But right now, three of the giant planes are putting in the toughest flying schedules of their careers.

Twenty-four hours a day, seven days a week, the planes are kept busy in tests to prove that they are airworthy under the stiffest set of rules ever devised (pictures). At Seattle's Boeing Airplane Co., a testing staff of 468 works without interruption to hurry

BEFORE TAKE-OFF on test flights, planes get rigid scrutiny—here of flap actuators.

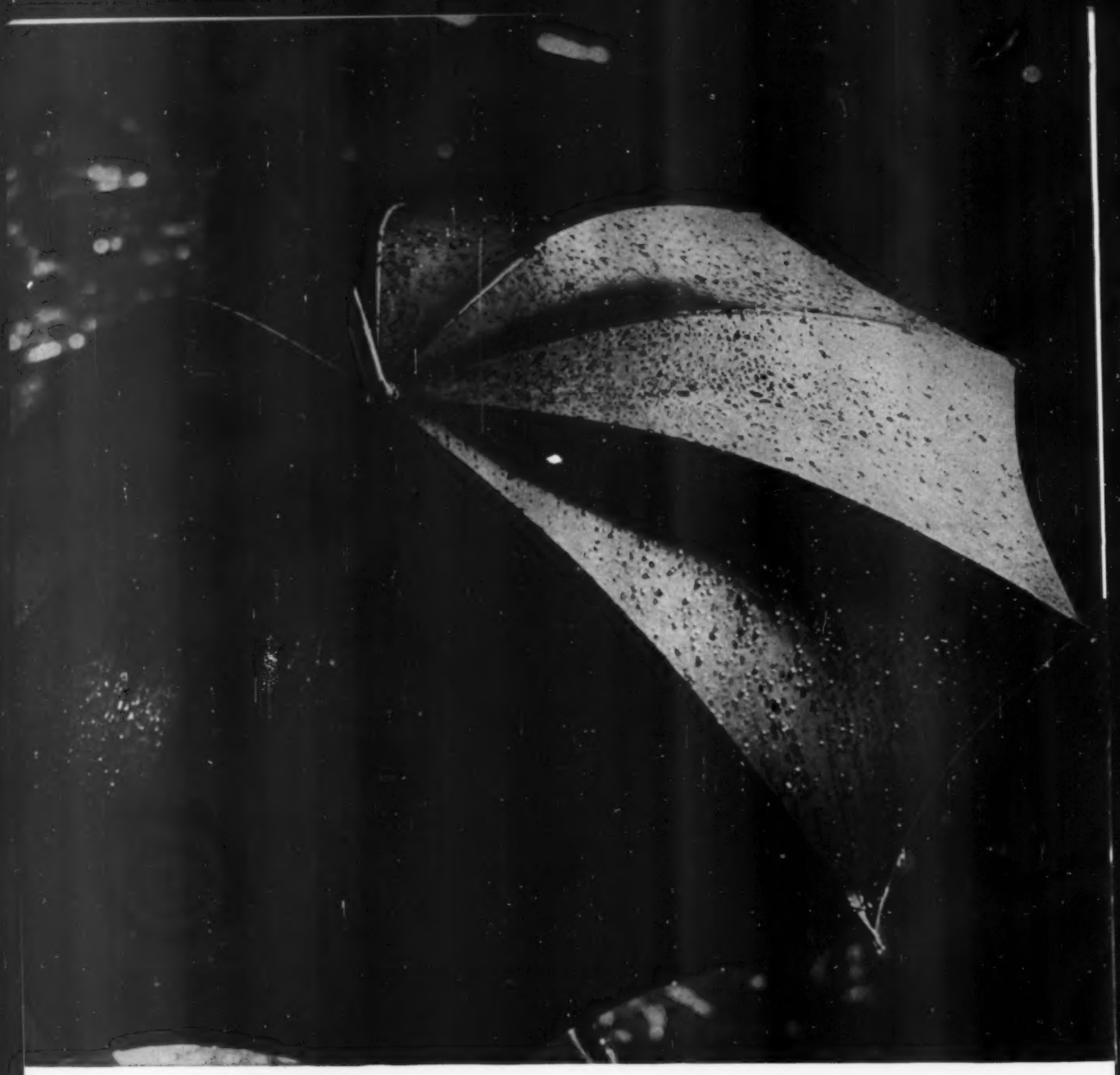
TEST PILOT William Gannett (with pencil) previews flight procedure with engineers.

INSTRUMENTATION engineer sets up electronic gadgets to record and code flight data inside plane, rushes to . . .



. . . RADIO ROOM where he watches test results as they happen, thanks to device that telemeters data direct to ground.

COCKPIT teems with activity just before take-off on a test. If the test involves hazard, however, only pilot and co-pilot will stay aboard.



GPE — technological bumbershoot

Covering the advanced needs of industry and defense is today's biggest technological job.

GPE has brought together, under one umbrella, broad physical resources plus a remarkably creative group of scientists, engineers and technicians. Its co-ordinated skills, knowledge, experience and producing facilities cover more than a dozen industries.

Each company in General Precision Equipment Corporation works close to the frontiers of science in its specific fields. Working together, they have rolled up an impressive record of achievement in new and often uncharted technological areas.

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The principal GPE companies cover needs of defense and industry in these areas: Audio-Visual, Automatic Controls and Automation, Aviation, Chemical Processing, Electronic and Electrical, Graphic Arts, Instrumentation, Marine, Motion Picture, Packaging, Paper, Petroleum, Photo Technology, Power Generation and Conversion, Printing, Steel, Television, Textile.

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Address inquiries to:
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92 GOLD STREET, NEW YORK 38, N. Y.

the process. And everyone at Boeing, from Pres. William M. Allen (cover) on down, is waiting for the big day when Civil Aeronautics Administration inspectors sign the last form and certify the 707 ready for regular service.

That day—only a few weeks away—will mean Boeing is officially back in the business of building commercial air transports and can start collecting on an investment of more than $200-million.

I. Boeing's Early Start

Since 1950, when Boeing built its last Stratocruiser, the company has concentrated on military aircraft—primarily the multijet B-47s and B-52s. But in 1952 Allen persuaded his directors to gamble $15-million on a prototype jet that could double as an Air Force tanker and civilian transport. This plane, the 707-80 (known familiarly around Boeing as the Dash 80), made its first flight in 1954. It was a convincing enough sales argument to bring Boeing some massive production orders —345 KC-135 tankers for the Air Force and 167 transports for 15 domestic and foreign airlines.

The Dash 80's success gave Boeing a big leg up in the jet race with Convair and, especially, Douglas—in whom the airlines have so much faith that they ordered 138 of its DC-8 jets without seeing a prototype. Boeing is still ahead, with $750-million worth of 707 orders against Douglas' $700-million in orders for the DC-8. The DC-8 isn't scheduled to complete its trials until November, 1959, and the Convair 880, even farther behind, won't be ready until 1960.

• **Delivery Dates**—Meanwhile, 707s will be flying in regular service. Pan American World Airways should get its first plane next month (18 months ahead of the first DC-8), and by November the first batch of six will be on Pan Am's transatlantic run. The next group will go to American Airlines for coast-to-coast flights.

To their 550-mph. speed, the Boeing giants will add capacity for nearly twice as many passengers as older craft—124 in first class, up to 162 in tourist. They are 36 ft. longer than a DC-7 but only

AFTER FLIGHT, test pilot describes to H. W. Zimmerman, an operations chief (center), how 707 feels at almost the speed of sound. Verbal reports are still important.

INTERIOR of one plane under tests has already been readied to receive passengers. In the sleek cabin, operations chief Bryan Mahon (right) checks noise level with microphone.

How to get uniformly good office paper

1. The hard way:

Go to the paper machine and judge formation as the paper speeds by at hundreds of feet per minute—just the way Hammermill papermakers do. Take frequent samples and analyze them right away.

And, of course, find a way to unlock the secret of using hardwood to make an even finer bond paper—the way they do at Hammermill with their exclusive Neutracel® pulp.

When you get through your paper will have a finer surface for printing, typing and writing—a surface that erases better, too. But you eliminate all the fuss and the bother and still get the quality letterheads you want when you take . . .

2. The easy way:

Ask your printer for

HAMMERMILL BOND

Choose Hammermill Bond to make a better impression. Printers everywhere use it. Many display this shield. Hammermill Paper Company, Erie, Pennsylvania.

13 ft. wider in wing span because they have so much power.

• **Best Advertisement**—Even though it's already ahead, Boeing is trying all the time to increase its time lead, on the theory that 707s will be their own best advertisement. Jet flying is almost twice as fast in the first place, and it's quiet and vibration-free. When the first jet passengers start flying and the word gets around, Boeing expects the 707 to become astoundingly popular.

II. Pioneers of Testing

That's why Boeing is so anxious for the 707 to graduate from its exhaustive course of tests. And so far the test program is ahead of schedule, although the plane is radically new and must pioneer its way through a maze of CAA regulations.

In part, the credit goes to an early beginning. Long before any jets had been built, the aviation industry cooperated with the Civil Aeronautics Board to set up safety rules for the new planes. The CAB promulgates the regulations; CAA enforces them. With jets it was particularly important to establish strict safety standards because of Britain's disastrous experience with the jet Comets, which crashed after metal fatigue caused the pressurized fuselage to split wide open at high altitude.

Together, CAA and Boeing are trying with their elaborate new rulebook to prevent any blemishes on the 707's record—and ultimately on that of other U.S. passenger jets. The goal is important enough to justify the extra cost of all the testing—about $15-million in all by the time the planes are carrying passengers, according to J. B. Connelly, vice-president and general manager of Boeing's Transport Div.

• **Teamwork**—Probably no other product is so carefully designed and intricate to inspect as a passenger aircraft, from windows to navigation lights to the tiniest mechanical part. It takes full cooperation between a manufacturer and CAA. At Boeing, CAA's five men—three pilots, two engineers—have their own offices right in the plant and full status as insiders. In addition, 18 of Boeing's own employees hold CAA inspector's ratings and thus can score tests themselves. To an outsider, this arrangement looks somewhat unusual, but in the business the CAA rating is a prized honor.

The job of these inspectors involves a lot more than just flying the plane. CAA's Engineering Div. goes over every drawing before a single piece of metal is turned, to assess structural integrity much as a highway department checks plans for a bridge. Then the CAA inspects the plane's hardware as it is made, to make sure it conforms to the

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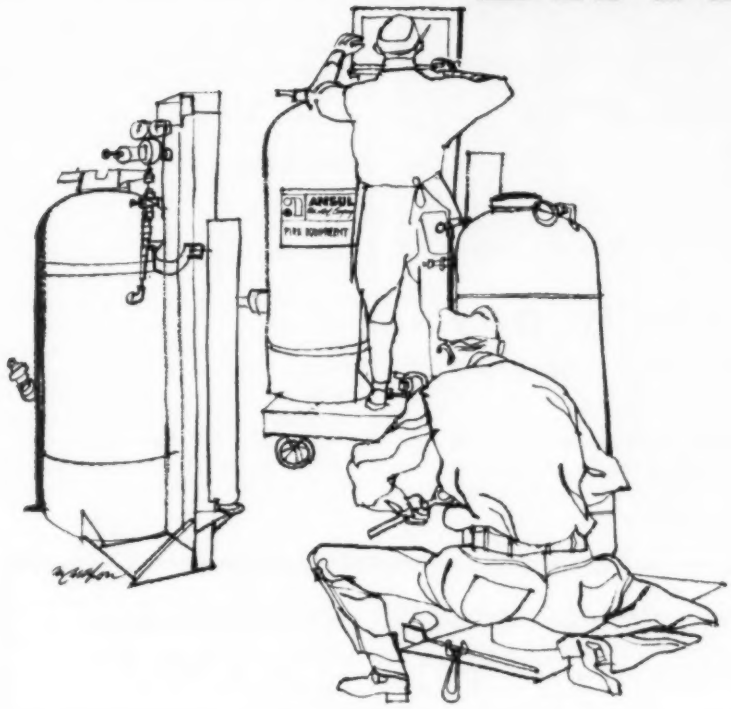

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drawings. Manufacturing inspection goes on all the time the type of aircraft is being produced. As each plane comes off the assembly line, it must be certified for manufacturing standards. And it has to pass a brief flight test with a CAA pilot aboard.

• **Highest Hurdle**—But the most stringent test comes when the first production models of a new type are ready. Then CAA goes to work to certify the type on the basis of its years of experience, incorporated in a half-inch-thick volume called Civil Air Regulations 46—Airplane Airworthiness, Transport Category. This closely typed book prescribes what the plane must have in the way of landing lights, radios, wheels, motors, fire control equipment, and so on. It also calls for performance tests to establish operating rules for the plane—how long a runway it needs, how big a load it can safely carry, and the like. Naturally, a manufacturer wants his new plane to be certified for the shortest possible runways so that it can be more versatile.

In addition, there are other, stiffer rules for jets, listed in a yellow booklet entitled SR 422. For example, because a jet engine loses power as the air temperature rises, it must be tested over the entire range of heat and cold it might encounter, instead of just at the extremes. Because jets fly two times higher and nearly two times faster than today's planes, they must be examined more rigorously for structural strength.

Boeing's first three 707s will log about 390 hours of flying time just to meet the CAA type certification requirements. It will take another 200 or so hours to finish Boeing's own tests and special tests for customers. Pan American, for instance, wants to know the exact noise level inside the passenger cabin and how its own navigation and radar gear will work in the new plane.

All the CAA tests apply only to civilian planes. It's up to the manufacturer and the military to test military craft.

III. Testing on the Ground

By the time the new 707s were ready for CAA flight tests last April, the government agency had already received two hefty packages of data on the planes. One had to do with structural engineering, the other with actual testing of individual systems and parts. That included overspeed runs on engines and accessories, static tests of components that grind themselves to destruction, and fatigue and creep tests on major structural members.

Boeing figures it has used up at least one complete 707 in static destructive tests. An entire fuselage, for example, was ultimately destroyed in tests of cabin pressurization. It was immersed

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in a tank of water and thousands of times put under more pressure than it would ever suffer in flight. Simultaneously, huge jacks wrenched the wings and tail to simulate maximum flying loads. The test proved beyond reasonable doubt that if something should poke a hole in a 707 at 40,000 ft., the hole wouldn't get any bigger. When this happened to the Comet, the plane was skinned in midair.

• **Windows in Pairs**—In part, the Comet accidents are responsible for all the attention to cabin pressures. But chances are the same rigid tests would have been necessary anyway, because of the 707's size, speed, and higher altitude range.

To insure strength of the cabin, Boeing has been extra-cautious with windows, potentially an area of high stress. The 707 has windows even smaller than most current piston-engine planes do. Instead of one big window at each seat location, the 707 has two small ones. This may have an advantage to the traveler. "It keeps the man at the window seat from hogging the whole view," says a Boeing engineer. "The passengers on the aisle seats can always get a peek out the second window."

IV. Testing in the Air

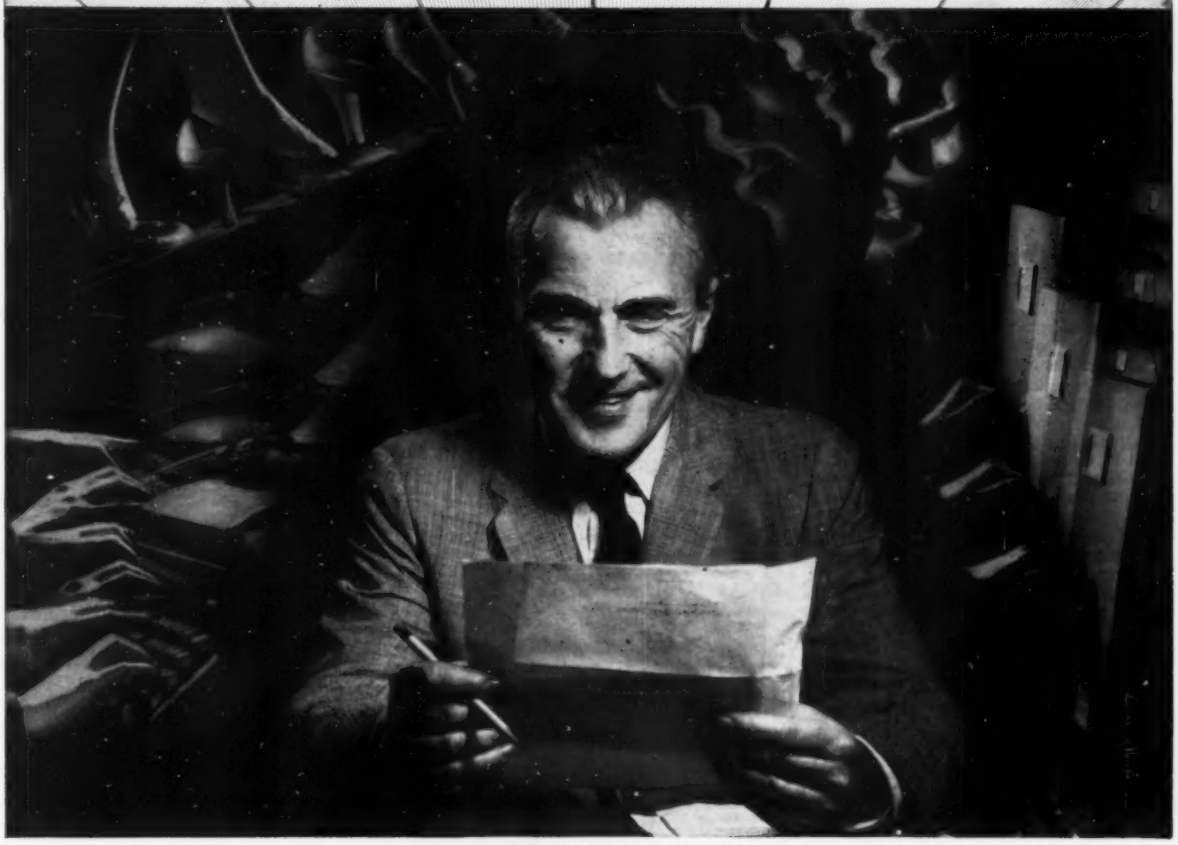
It's in the flight tests that activity is really hectic at the moment, with three planes at once piling up results on some 300 separate tests—70 or more of which must be witnessed by CAA personnel. If time were no problem, one plane could do it all, but with the pressure on to hurry, it pays to triple up. Douglas has said it will put as many as nine DC-8s through tests simultaneously for the same reason.

Boeing's Flight Test Center in Seattle is tightly organized for maximum efficiency. A chief operations engineer is responsible for the tests of each plane, and he virtually lives aboard the craft until the job is done. Under each operations engineer is a team of about 25 engineers, instrumentation specialists, and technicians. Test pilots are organized separately, but each plane has its permanent pilot and co-pilot, too.

• **Labs Aloft**—The three production model 707s and the Dash 80 are all involved in the tests, and each one is a flying laboratory. The Dash 80 is a test bed for new engines and such gear as water-cooled brakes. Right now, it's flying with three different types of engines—two early Pratt & Whitney JT-3s of 9,000 lb. thrust, a newer JT-3 with about 12,000 lb. thrust, and a big JT-4 in the 15,000-lb.-plus class. The other three planes are strictly production models, with matching engines, sound suppressors, and thrust reversers.

Each of the planes has its own special list of tests to master. Plane No. 1

Get rid of disturbing noise



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". . . the company's experience with military jets has been a big help . . ."

JET TESTS starts on p. 148

is mainly trying out aircraft systems—hydraulic, electric, autopilot, and others. Plane No. 2's assignment is over-all performance; it's going through take-off tests to determine how heavily it can be loaded at various airports and how it behaves under conditions such as the searing desert heat at Edwards Air Force Base, Calif., and the relatively high altitude at Oklahoma City.

Plane No. 3 is a standard production version all the way through—even to a finished mural on the screen dividing the passenger compartment from the lounge. CAA pilots will take it through 150 hours of "function and reliability tests," a series of fast take-offs and landings and short flights simulating ordinary service. The tests are equivalent to about 750 hours of airline flying time, and if no trouble shows up, the plane will get its certificate.

• **Experience Helps**—Though it's an infinitely complex job for Boeing to get into the jet transport business, the company's experience with military jets has been a big help. And this is even evident in the testing.

Many of the instrumentation and data-recording techniques were perfected in testing bombers. Such is the case with the electronic equipment in two of the planes that codes data from delicate test instruments and records it on a 14-channel magnetic tape. When the plane lands, the tape is rushed to a data reduction center, and computers and printers often turn out a report faster than the engineers can gather for their post-flight meeting.

Occasionally, data is even telemetered directly from the plane to the ground. This technique is used in such hazardous tests as the one for high-speed flutter damping—in which the pilot puts the plane into a shallow dive at full throttle, then causes it to flutter by kicking the controls. Because of the danger, the crew is kept to a minimum. But engineers on the ground can read telemetered signals from strain gauges and accelerometers in the plane's wings, tail, and engine pods.

• **Next Assignment**—Thanks to the pace at which Boeing's tests have been moving, the 707s will be ready for their first passengers at least five months ahead of the original timetable. But when the planes go into service, the test group won't be able to relax. Boeing's first intercontinental-model 707 is about to emerge from the factory. And it presents a whole new set of problems for inspectors to solve. **END**

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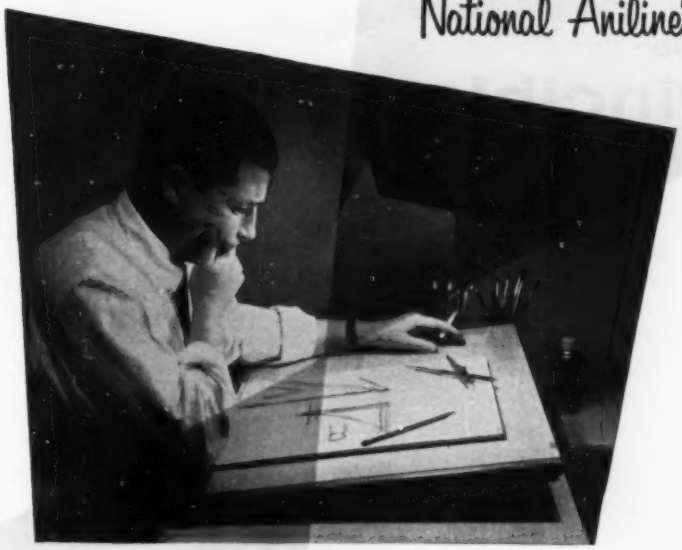

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NEW PRODUCTS

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. . . of polyethylene now are commercially feasible. It means a gain in the war against chemical corrosion.

Polyethylene, much touted for its resistance to chemical attack, now is going to be commandeered for the fight against corrosion, a problem that costs industry $6-billion a year. Tank Lining Corp., Pittsburgh, specialist in the protective coating of chemical tanks (BW—Mar.9'57,p188), has developed a commercially successful method of applying an interior lining of polyethylene to steel tanks and piping.

Until now, attempts to use polyethylene as a coating material were a limited success at best. Flame spraying it on a surface altered the resistant qualities of the plastic itself. Dip coating methods limited its range of applications—it's impossible to dip coat an entire tank car.

• **Three-Step Process**—Tank Lining Corp.'s three-step approach to the application job doesn't lower the chemical and physical properties of the polyethylene. The operation involves (1) special preparation of the tank's interior surfaces, (2) spraying on the high density linear-type polyethylene, (3) finishing with a carefully controlled heat treating process.

According to Tank Lining Corp., the new lining should find wide use in chemical processing equipment and piping, in tank cars and trucks, and for lining storage tanks up to 150,000 gal. in size. So far, tests indicate that the polyethylene lining is resistant to 83% phosphoric acid, 90% sulphuric, ethyl and methyl alcohol, sour crude oils, and such solvents as xylene and naphtha.

• **Limitations**—However, the temperature limits of the polyethylene lining at present run between —60F and about 180F. Its abrasion resistance is only moderate, though relatively heavy and resilient linings can be applied to get around this problem somewhat. The new lining is not recommended as a barrier against strong oxidizing agents and some aromatic solvents. But where it can be used, its slickness is expected to ease tank cleaning a good bit.

Tank Lining Corp., which does not manufacture or sell coating materials, has applied for patents on its process and plans to license other tank lining companies to use it.

The new linings are expected to be in the same price range as phenolics, and about one-fourth to one-half as expensive as such sheet lining materials as rubber and Neoprene. **END**

New high speed towboat . . . has power, will travel

The *Sally Polk,* first of the new Dravo-3200 towboats, was clocked at an average speed of 12.9 m.p.h. in trial runs with an 8500-ton petroleum tow. She is now in the New Orleans-St. Louis service of Canal Barge Company, Inc.

Another of these high speed 3200 horsepower towboats, the *Crescent City,* has joined the fleet of Sioux City & New Orleans Barge Line, Inc. Design features developed by Dravo during model basin tests in the Netherlands give the "3200" greater pushpower than other towboats of equal size and power.

A third Dravo-3200 is available for late spring delivery.

For more information on Dravo-3200 towboats, or other products and services, write DRAVO CORPORATION, PITTSBURGH 25, PA.

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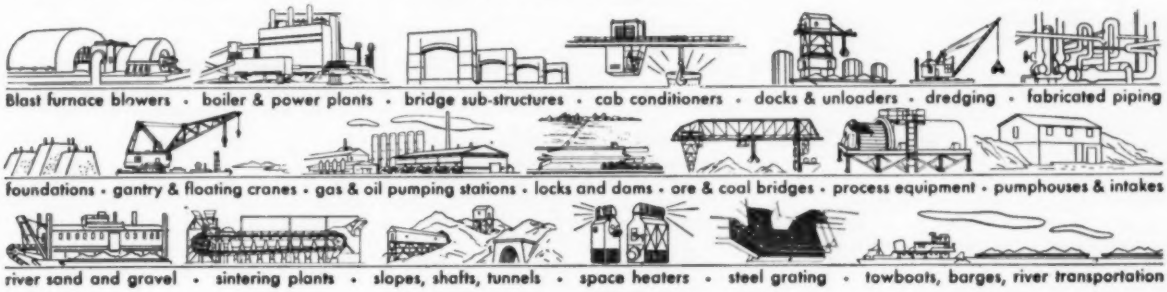
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To cope with the problem, Universal Transistor Products Corp. has developed a new battery-operated transistorized X-ray detector. This lightweight (8 lb.) unit, resembling a Geiger counter, has been designed to operate over the 100-kilo-electron-volt to 600-KEV energy level. It is specially shielded so it can measure radiation levels in spite of the presence of high intensity electromagnetic, magnetic, or electrical fields.

Built to military specifications, the new detector, Model 607X, operates from standard-sized flashlight batteries. Temperature range is from −20F to 120F. It costs $595.

NEW PRODUCTS BRIEFS

An electronic photo enlarger that automatically judges the amount of light to which printing paper should be exposed is being marketed by LogEtronics, Inc., Alexandria, Va. It uses a scanning cathode tube as the exposure light source, coupled with a light-monitoring phototube system. This makes it possible to intensify and dim the beam as it projects the sections of the picture to "burn" in highlights and preserve shadows.

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An aluminum foam that can be sawed, nailed, screwed, cemented, soldered, or brazed will be produced by Dynamic Metals, Inc., Houston. Developed by Bjorksten Research Laboratories, Madison, Wis., this lightweight bubbly aluminum is expected to have widespread use in the aviation industry. It also has potential as a rot and fire resistant building material.

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Plastic display letters that adhere to both smooth and textured surfaces and can be easily transferred and used over again have been developed by Planascope Corp., New York. Ranging in size from ½ in. to several inches, the letters can be used outdoors, too. They are available in both solid and transparent colors. Aluminum sheets containing from 85 to 2,000 letters, depending on the size, sell for $4.95.

ADVERTISERS IN THIS ISSUE

Index for Business Week June 21, 1958

ALCOA STEAMSHIP CO., INC. 21
Agency—Fuller & Smith & Ross, Inc.

ALLIED CHEMICAL CORP. (NAT. ANILINE DIV.) 159
Agency—James J. McMahon, Inc.

ALLIS-CHALMERS MFG. CO. 80
Agency—Compton Adv., Inc.

AMERICAN APPRAISAL CO. 48
Agency—The Buchen Co.

AMERICAN CREDIT INDEMNITY CO. 85
Agency—VanSant, Dugdale & Co., Inc.

AMERICAN ELECTRIC POWER CO. 128
Agency—J. Walter Thompson Co.

AMERICAN TELEPHONE & TELEGRAPH CO. 109
Agency—Cunningham & Walsh, Inc.

AMERICAN TELEPHONE & TELEGRAPH CO. 86
Agency—N. W. Ayer & Son, Inc.

ANSUL CHEMICAL CO. 153
Agency—The Brady Co., Inc.

AUTOMOTIVE & AIRCRAFT DIV., AMERICAN CHAIN & CABLE 80
Agency—Reincke, Meyer & Finn, Inc.

BAKELITE CO. 10-11
Agency—Richard LaFond Adv., Inc.

BALTIMORE & OHIO RAILROAD 78
Agency—The Richard A. Foley Adv. Agency, Inc.

BANKERS BOX CO. 76
Agency—Frank C. Jacobi

BELL HELICOPTER CORP. 117
Agency—Rogers & Smith

BETHLEHEM STEEL CO. 89
Agency—Jones, Brakeley & Rockwell, Inc.

B-I-F INDUSTRIES, INC. 70
Agency—Horton, Church & Goff Inc.

BLAW-KNOX CO. 4
Agency—Ketchum, MacLeod & Grove, Inc.

BROWN & ROOT, INC. 155
Agency—D'Arcy Adv. Co.

BURNHAM'S VAN SERVICE 110
Agency—Adams-Allison Co.

BUSINESS WEEK 142-143

BUTLER MFG. CO. 74-75
Agency—Aubrey, Finlay, Marley & Hodgson, Inc.

CELANESE CORP. OF AMERICA 53
Agency—Ellington & Co., Inc.

CHAMPION PAPER & FIBRE CO. 46
Agency—Campbell-Ewald Co.

CHICAGO BRIDGE & IRON CO. 100
Agency—Russell T. Gray, Inc.

C.I.T. CORP. 132
Agency—Fuller & Smith & Ross, Inc.

CLUES (CLASSIFIED ADVERTISING) 162

COLSON CORP. 52
Agency—Rothbardt & Haas Adv., Inc

CONNECTICUT GENERAL LIFE INSURANCE CO. 63
Agency—Cunningham & Walsh Inc.

CUNNINGHAM & WALSH, INC. 156
Agency—Cunningham & Walsh, Inc.

DEARBORN CHEMICAL CO. 7
Agency—The Buchen Co.

DEERE & CO. 158
Agency—Klau-Van Pietersom-Dunlap, Inc.

DELCO REMY DIV., GENERAL MOTORS CORP. 96
Agency—Campbell-Ewald Co.

DENNISON MFG. CO. 162
Agency—Batten, Barton, Durstine & Osborn, Inc.

DOUGLAS FIR PLYWOOD ASSN. 125
Agency—The Condon Co.

DOW CHEMICAL CO. 14-15
Agency—MacManus, John & Adams, Inc.

DRAVO CORP. 161
Agency—Ketchum, MacLeod & Grove, Inc.

E. I. DU PONT DE NEMOURS & CO. 67
Agency—Batten, Barton, Durstine & Osborn, Inc.

EASTMAN CHEMICAL PRODUCTS, INC. 99
Agency—Fred Wittner Adv.

EDMONT MFG. CO. 114
Agency—Maurice Mullay, Inc.

FIRST NATIONAL CITY BANK OF NEW YORK 101
Agency—Batten, Barton, Durstine & Osborn, Inc.

FRICK CO. 156
Agency—Waynesboro Adv. Agency

FUJI BANK, LTD. 90
Agency—Grant Adv. Agency, Ltd.

GENERAL ELECTRIC CO. (LAMP DEPT.) 147
Agency—Batten, Barton, Durstine & Osborn, Inc.

GENERAL FIREPROOFING CO. 122
Agency—The Griswold-Eshleman Co.

GENERAL PRECISION EQUIPMENT CORP. 150-151
Agency—Geer, DuBois & Co., Inc.

GENERAL TELEPHONE SYSTEM 119
Agency—Kudner Agency, Inc.

GEORGIA POWER CO. 108
Agency—Lowe & Stevens

B. F. GOODRICH INDUSTRIAL PRODUCTS CO. 3
Agency—The Griswold-Eshleman Co.

GREAT LAKES STEEL CORP. 88-89
Agency—Campbell-Ewald Co.

HALOID XEROX INC. 84
Agency—Hutchins Adv. Co, Inc.

HAMILTON MFG. CORP. 65
Agency—Caldwell, Larkin & Sidener-Van Riper, Inc.

HAMILTON PAPER CO. 114
Agency—Gray & Rogers

HAMMERMILL PAPER CO. 152
Agency—Batten, Barton, Durstine & Osborn, Inc.

C. S. HAMMOND & CO. 76
Agency—Tveter, Inc.

HERTZ SYSTEM, INC. 144
Agency—Campbell-Ewald Co.

HOOVER BALL & BEARING CO. 43
Agency—The Fred M. Randall Co.

ILLINOIS TOOL WORKS, SHAKEPROOF DIV. ..... 4th Cover
Agency—Waldie & Briggs, Inc.

INTERNATIONAL HARVESTER CO. 56-57
Agency—Young & Rubicam, Inc.

INTERNATIONAL TELEPHONE & TELEGRAPH CORP. 104
Agency—J. M. Mathes, Inc.

INVINCIBLE METAL FURNITURE CO. 160
Agency—Klau-Van Pietersom-Dunlap, Inc.

JOHNS-MANVILLE CORP. (ACOUSTICAL MATERIALS) 157
Agency—J. Walter Thompson Co.

JONES & LAMSON MACHINE CO. 39
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Russia's New Economic Challenge

A number of developments point up the fact that the Soviet Union has launched a full-scale economic offensive that may prove to be one of the decisive contests of the cold war.

This week, the State Dept. issued a report that details the Soviet Union's vast expansion in aid and trade with underdeveloped nations. Its view that this economic offensive was "the most dangerous of all" was supported by a new Rockefeller report, which made clear that the underdeveloped nations are becoming increasingly vulnerable to the Communists' moves. The need to combat this attack is made explicit in the Rockefeller report and is implicit in the State Dept.'s study.

Actually, the Administration has plans for putting new life into the International Monetary Fund and the World Bank (page 26)—plans that will make the free world less vulnerable to Soviet blandishments and more able to satisfy the demands for growth.

The U. S. must also consider the direct request by Premier Khrushchev for large-scale U. S. credits to help finance Russian purchases. This is not a modest proposal that can be dismissed as a mere propaganda stunt. For our allies are already beating a path to Moscow for orders. And American businessmen, faced with slackened activity at home, will undoubtedly press for increased trade abroad.

The Soviet offensive is designed to drive a wedge between the U. S. and its allies, and between American businessmen and the Administration. And if Washington is reluctant—or halfhearted—in meeting the Russian attack, then the Communists will be on their way to a major victory.

It is a truism that economic warfare can count as much as military warfare. Indeed, to wage it successfully requires the flexibility and aggressiveness possessed by a victorious army.

The Russians are demonstrating that they have flexibility and aggressiveness. Abandoning their old position against trade with the West, they are now dangling shopping lists that are attractive to businessmen everywhere.

Up until now, we have pooh-poohed the Russian trade offensive in the same way we once belittled Soviet scientific prowess. But now Washington and the free world have awakened to the dangers. There is a general recognition of the need to take effective counter action—the sort of bold thinking and action that characterized the Marshall Plan.

The course of the cold war demands a flexible program for the free world. This can only come from the U. S., the leading trading nation.

This does not mean we have to bow to Khrushchev's proposals, or outdo the Russians on every loan. But it does mean that we must seek new and effective means to increase trade. We can even expand trade with the Communists, provided there is a quid for every quo.

Revising our policies is in our own self interests. For in fighting the cold war, we cannot afford to neglect any battlefront.

End of a Legend

The case of Sherman Adams, as it has unfolded, can only be called a puzzlement.

Adams created a character for himself in the minds of many Americans. Like Hawthorne's Great Stone Face, the Old Man of the Mountain at Franconia Notch, New Hampshire, Adams became a symbol of a New England legend. He was the embodiment of a character Yankees hold dear—remote, flintily hard, able, ruggedly honest. This character is very rare even in New England, but it is so respected that it is widely recognized and accepted. As the living counterpart of the legend, Adams led the Republican campaign against Democratic "corruption" in 1952—and since—with no fear of counterattack.

Now Adams has testified before the House Committee on Legislative Oversight that he allowed Bernard Goldfine, a Boston industrialist, to pay something more than $2,000 in hotel bills for him, to give him an expensive vicuna coat, and to lend him an oriental rug. At the same time, Goldfine was deeply involved with federal regulatory agencies and Adams made calls to those agencies on his behalf (page 34).

These things would not be at all puzzling if they cropped up on the record of some political innocent new to Washington and accustomed to living on the expense account. Nor would they be held against a run-of-the-wards politician. They do puzzle the nation when they are charged against the man who above all others has stood for rectitude in an Administration dedicated to being as clean as a hound's tooth. That vicuna coat doesn't look one bit better on Sherman Adams than it would on a Democrat.

We think that Adams made it very clear in testifying that there was no question of wrong intent in his actions. But there remains a large question about the quality of the judgment of the man on whom the President relies so heavily.

The decision on whether Adams should stay on in the Administration is, of course, up to the President—and he has said that Adams has his confidence and that he needs him.

But now that the legend has been destroyed we wonder how long Adams can continue to be useful. And we regret that his case will undermine a tradition that was a real part of New England's pride.

Eastern Air Lines found that increased take-off power meant increased maintenance costs—until a product of Shell Research was put to work.

How to lead 10,000 horses to water

WHEN PICKING UP SPEED for take-off, an airplane calls for all the horsepower its engines can supply. In some engines, this boost comes from a quick drink of water.

This technique, called *water injection*, cools the fuel charge and makes the engines more efficient. But it also can create maintenance problems. Why? Because alcohol must be added to the water to prevent freezing, and this mixture is corrosive.

Eastern Air Lines, consulting with Shell engineers, applied an effective remedy. A water-soluble product of Shell Research—Shell Dromus* Oil—was mixed with the water as an emulsion and alcohol was added later. Corrosion control was immediate and Eastern's maintenance costs dropped sharply.

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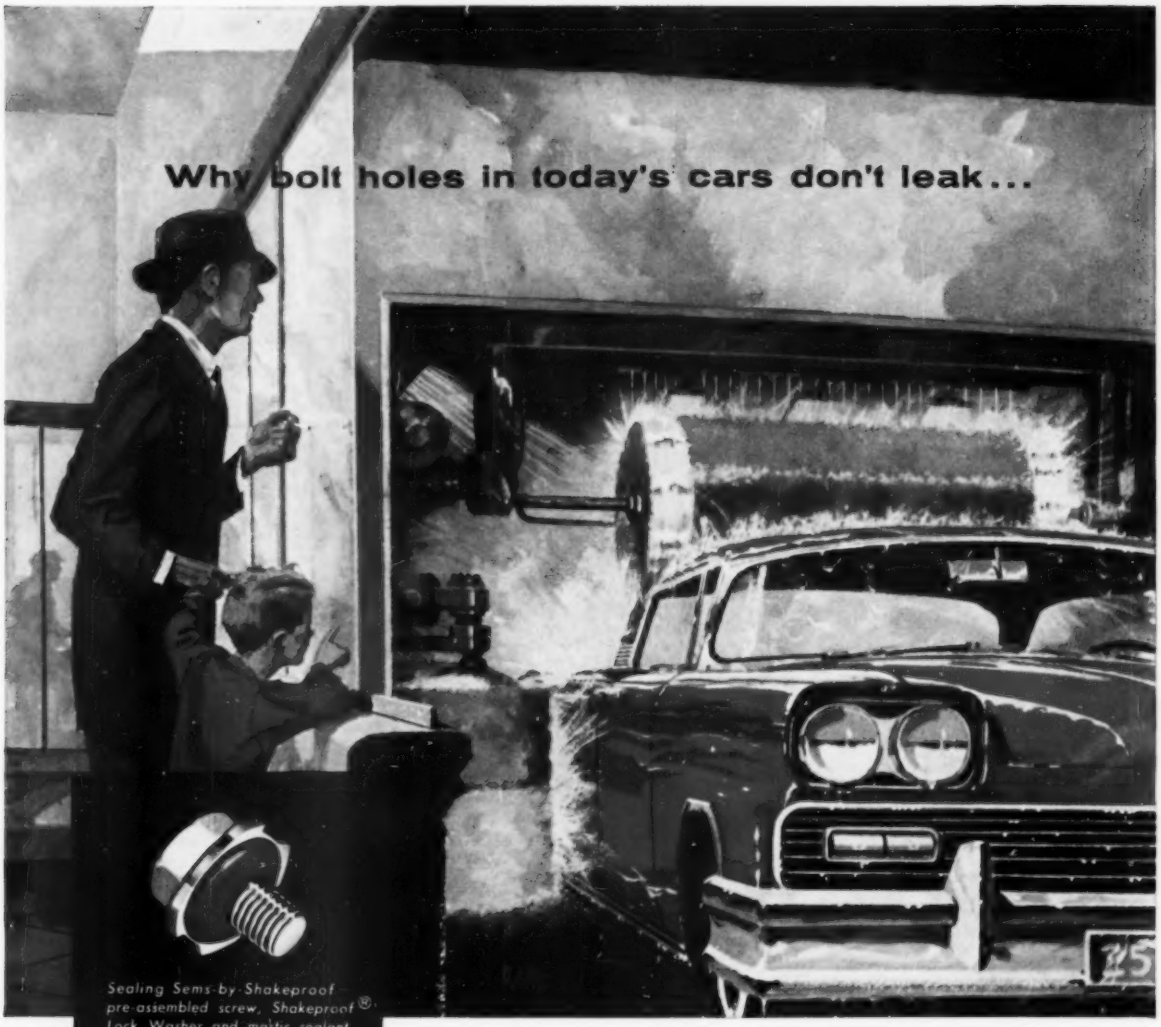

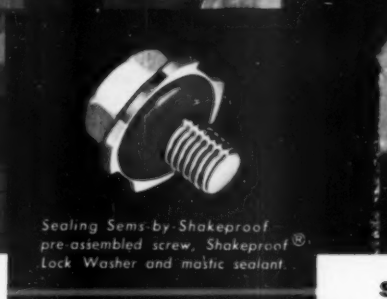

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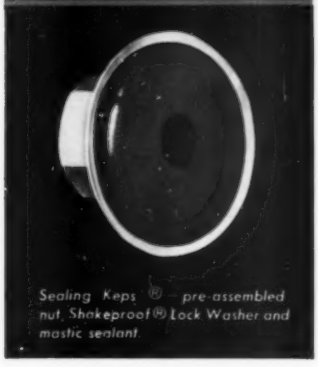

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